

Acc. Nr: **AP0051914**

Ref. Code: **UR0425**

PRIMARY SOURCE: **Vrachebnoye Delo**, 1970, Nr **2**, pp **49-53**

**FAMILIAL IDIOPATHIC NEPHROPHTHISIS**

**A. P. Peleshchuk and I. G. Silnitskaya (Kiev)**

The clinical symptoms and course of nephrophthisis are described in 5 patients from three families but not consanguinally connected. Though the clinical picture was rather typical, the disease was diagnosed only with development of total chronic renal insufficiency. The authors single out two stages in nephrophthisis. Not only pediatricians should be familiar with this disease because the patients survive usually to adult age. Disorders of ammoniogenesis are of significance. Recommendations on treatment of nephrophthisis are given.

REEL/FAME  
**19820397**

USSR

UDC 533.92:621.039.61

(12)

ALEKSIN, V. F., BIRYUKOV, O. V., VISHNEVETSKIY, V. N., GEORGIYEVSKIY, A. V., GROT, Yu. I., DIKIY, A. G., ZISER, V. Ye., KITAYEVSKIY, L. KH., KONOTOP, P. I., POGOZHEV, D. P., PELETNINSKAYA, V. G., SERGEYEV, Yu. F., SMIRNOV, V. G., SUPRUNENKO, V. A., TOLOK, V. T., and TARAN, V. M.

"Development and Synthesis of the "Uragan" Stellarator and Investigation of Magnetic Surfaces of High Shear"

Kiev, Fizika Plasmy i Problemy Upravlyayemogo Termoyadernogo Sinteza (Plasma Physics and Problems in Controlled Thermonuclear Synthesis -- collection of works) "Naukova dumka," No 3, 1972, pp 73-112

Abstract: After an initial section devoted to a review of the literature on the magnetic surfaces of toroidal stellarators and the principles of stellarators in general, the authors analyze the "Uragan" specifically. In particular, this paper is concerned with the problems involved in choosing the parameters of the magnetic system for the racetrack stellarator to obtain magnetic surfaces with high shear. This last term is defined as the extent of crossing of the magnetic lines of force. The synthesis and adjustment of the magnetic system are also examined, and  
1/2

USSR

ALEK SIN, V. F., et al., Fizika Plasmy i Problemy Upravlyayemogo  
Termoyadernogo Sintez, "Naukova dumka," No 3, 1972, pp 73-112

the results are given of an investigation into the instrument's magnetic surfaces. Computations worked out on an electronic computer for the design of the magnetic system are described, and differences between the "Uragan" and the "Sirius" stellarators are indicated. A comparative table of the parameters for various types of stellarator is given; it shows that the "Uragan" is one of the more powerful thermonuclear machines, with a high shear value for its substantial 10 koeersted magnetic field intensity. This article is liberally illustrated with photographs and line drawings and has a bibliography of 51 titles.

2/2

- 65 -

USSR

UDC 533.92:621.039.61

ALEKSIN, V. F., BIRYUKOV, O. V., VISHNEVETSKIY, V. N., GEORGIYEVSKIY, A. V., GROT, Yu. I., DIKIY, A. G., ZISER, V. Ye., KITAYEVSKIY, L. Kh., KONOTOP, P. I., POGOZHEV, D. P., PELETMINSKAYA, V. G., SERGEYEV, Yu. F., SMIRNOV, V. G., SUPRUNENKO, V. A., TOLOK, V. I., TARAN, V. M.

"Development and Production of the Magnetic System of the 'Uragan' Stellarator and a Study of Magnetic Surfaces With Large Shear"

Fiz. plazmy i probl. uprav. termoyader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No. 3, pp 73-112 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G279)

Translation: This paper concerns the study of the magnetic system of the three-loop "Uragan" stellarator-racetrack. Considerations concerning the selection of optimal parameters of the magnetic system of the stellarator are discussed. The equipment of the "Uragan" is briefly described. An experimental study of the magnetic surfaces made with the aid of low-energy electron beams showed that in the "Uragan" stellarator-racetrack with

1/2

USSR

ALEKSHIN, V. F., et al, Fiz. plazmy i probl. uprav. termoyad. sinteza.  
Resp. mezhved. sb., 1972, No. 3, pp 73-112

individually controlled cylinders there are closed magnetic surfaces with high shear values ( $\sim 0.09$ ) and angle of rotational conversion ( $\sim 240^\circ$ ). The experimental data are compared with calculated values obtained on the BESM-6 computer.

2/2

- 53 -

1/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--GENERATING FUNCTIONAL METHOD AND VIRIAL EXPANSIONS IN NON  
EQUILIBRIUM STATISTICAL MECHANICS -U-  
AUTHOR-(02)-PELETMINSKIY, S.V., YATSENKO, A.A.  
COUNTRY OF INFO--USSR  
SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 3, NR 2, PP  
287-300  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--STATISTIC MECHANICS, FUNCTION THEORY, FUNCTIONAL EQUATION,  
PARTICLE DISTRIBUTION, INTEGRAL EQUATION, DISTRIBUTION FUNCTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3003/0658 STEP NO--UR/0646/70/003/002/0237/0300  
CIRC ACCESSION NO--AP0129823  
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129823

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NOTION IS INTRODUCED OF GENERATING FUNCTIONA WHICH MAKES IT POSSIBLE TO OBTAIN ALL THE MANY PARTICLE DISTRIBUTION FUNCTIONS BY MEANS OF TAKING THE DERIVATIVES WITH RESPECT TO FUNCTIONAL ARGUMENT. FOR THE FUNCTIONAL INTRODUCED THE EQUATION IS FOUND, WHICH IS EQUIVALENT TO THAT FOR THE DENSITY MATRIX. IT IS SHOWN THAT THE STATIONARY SOLUTION OF THIS EQUATION, COMPLEMENTED BY THE PRINCIPLE OF THE SPATIAL CORRELATION RELAXATION (THE LATTER CAN BE FORMULATED SIMPLY IN TERMS OF GENERATING FUNCTIONAL), IS EQUIVALENT TO THE GIBBS DISTRIBUTION. THE INTEGRAL EQUATION IS DEDUCED FOR THE GENERATING FUNCTIONAL AT THE STAGE OF EVOLUTION WHEN THE STATE OF SYSTEM IS DESCRIBED BY THE DISTRIBUTION FUNCTION, AND A METHOD IS DEVELOPED FOR SOLVING THIS EQUATION IN THE FORM OF THE SERIES IN THE DENSITY POWERS.

FACILITY: FIZIKO-TEKHNICHESKIY INSTITUTE AKADEMII NAUK USSR.

UNCLASSIFIED

USSR

AKHIEZER, A. I., Academician of the Academy of Sciences Ukrainian SSR, and  
PELETNINSKIY, S. V., Khar'kov State University imeni A. M. Gor'kiy

"Kinetics of Black-Body Radiation"

Moscow, Doklady Akademii Nauk SSSR, Vol 200, No 6, 1971, pp 1317-1320

Abstract: It is well known that if an inner cavity is made in a body in a state of statistical equilibrium, equilibrium radiation occurs in the cavity. The article studies how the process of photon thermalization takes place in such a cavity and the substance surrounding it. The authors first consider the process whereby thermal equilibrium of the photons is established in the substance itself in the absence of a cavity. Then it is assumed that there is a cavity in the substance, bounded by two parallel planes.

1/1

- 109 -



USSR

UDC: 536.2:536.63

PELETSKIY, V. E., CHEKHOVSKOY, V. Ya., SOVITSKIY, Ye. M., TYLKINA, M. A.,  
AMASOVICH, Ye. S., ARSKAYA, Ye. P., ZAYCHENKO, V. M., PETUKHOV, V. A.,  
Institute of High Temperatures of the Academy of Sciences of the USSR,  
Institute of Metallurgy imeni A. A. Baykov of the Academy of Sciences of  
the USSR

"Some Physical Properties of a New Alloy in the Nickel-Rhenium-Molybdenum  
System"

Moscow, Teplofizika Vysokikh Temperatur, Vol 11, No 2, Mar/Apr 73, pp  
435-436

Abstract: The authors study the heat conduction, coefficient of thermal  
expansion and resistivity of an alloy in the nickel-rhenium-molybdenum  
system containing 10 wt.% Re and 15 wt.% Mo. Curves are given showing the  
temperature dependence of the measured parameters between 100 and 1000°C.  
The results indicate structural transformation of the alloy in the solid  
state. Analysis points to the possibility of formation of the so-called  
K-state observed in the region of solid solutions of the nickel-chromium  
system with more than 16% chromium. However, a final explanation of the  
observed anomalies will require further research.  
1/1

- 53 -

USSR

Powder Metallurgy

UDC 629.24:537.311:536.2

BEL'SKAYA, E. A., PELETSKIY, V. E., YAKOVLEV, V. K.

"Experimental Study of the Transfer Properties of Porous Nickel"

Kiev, Poroshkovaya Metallurgiya, No 8, Aug, 1972, pp 44-50.

Abstract: The authors studied the transfer properties of porous nickel produced by pressing from nickel powder of at least 99.7% purity. The specimens were made from powders of four series differing in particle size (2.5 to less than 0.5  $\mu$  in diameter). The porosity was primarily open, but the percentage of closed pores in the compact materials was significant. Porosities varied between 20 and 65%. Heat conductivity was measured in 12 samples, electrical conductivity in 28 samples, using methods assuring errors of less than 10% and 2% respectively. The experimental data produced generally satisfied the formula of Skorokhod for conductivity as a function of porosity for a two-phase statistical mixture.

1/1

USSR

UDC 535

PELETSKIY, V. E., DRUZHININ, V. P.

"Experimental Study of the Integral Hemispherical Degree of Blackness of Refractory Metals and Alloys"

V sb. Teplofiz. svoystva tverd. veshchestv. (Thermophysical Properties of Solids -- Collection of Works), Moscow, "Nauka", 1971, pp 143-146 (from RZh-Fizika, No 7, Jul 71, Abstract No 7D962)

Translation: The characteristic features of experimental devices developed for the precision study of the integral hemispherical degree of blackness and specific energy resistance of single crystal and polycrystalline samples of refractory metals and alloys are described. The error of measurement did not exceed  $\pm 5-6\%$  for the degree of blackness and  $\pm 1.0-1.5\%$  for the specific energy resistance. Poly- and single-crystals of molybdenum, alloys of molybdenum with rhenium, pure rhenium, alloys of nickel with rhenium, and other materials were investigated. 10 ref. Authors abstract.

1/1

- 60 -

USSR

UDC 669-172:541.12.036

PELETSKIY, V. E., DRUZHININ, V. P., and SOBOL', Ya. G.

"Thermophysical Properties of Monocrystalline Molybdenum in the High-Temperature Area"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 85-89

Translation: The heat conductivity coefficient, specific electrical resistivity, and intergral hemispherical degree of blackness of monocrystalline molybdenum are studied. The measurements were performed in the 1,000-2,200°K interval on specimens with various crystallographic orientations of growth axes. Measurements of the degree of blackness were performed both on cylindrical and on flat specimens with predetermined surface orientation. The results show good correspondence with the data for polycrystals of the same degree of purity, and confirm the isotropic nature of these properties of single crystals with cubic lattices. 2 Tables; 2 Figures; 6 Bibliographic References.

1/1

AA0044785- Peletsky, V. E.

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

243899 COEFFICIENT OF THERMAL CONDUCTIVITY OF METALS  
AND ALLOYS, method for its measurement in which  
the thermal flow from the specimen lateral surface is  
measured by a radiation calorimeter, and that from the  
other end face is drained off and measured by an  
enthalpic calorimeter-cooler; the coefficient of  
thermal conductivity is calculated from a know  
formula. This increases the measurement accuracy,  
widens the temperature range and makes it possible  
to find local values of this coefficient.

The tested cylindrical specimen is mounted  
by its lower end face in the enthalpic calorimeter  
which also acts as a cooler. A constant heat flow is  
applied to the upper end face, e.g. by an electronic  
heating. Part of the heat flow is radiated from the  
specimen lateral surface, and the rest enters through

1/2

18

19771599

AA0044785

the lower end face into the calorimeter-cooler.

In order to reduce and measure the lateral flows a sectional radiation calorimeter is used in form of insulated from each other rings mounted around the specimen with a clearance of 0.3-0.5 mm. 24.2.67 as 1136019/18-10. PELETSKII, V. E. et alia. HIGH TEMPERATURES RES. INST. AC. SC. USSR. (1.10.69) Bul 7/ 14.5.69. Class 421. Int. Cl. G 01k.

243899

AUTHORS: Peletskiy, V. E.; Sobol', Ya. G.

Nauchno - Issledovatel'skiy Institut Vysokikh Temperatur

AN SSSR

19771600

1/2 015  
UNCLASSIFIED  
TITLE--AUTOMATIC WELDING OF TEE JOINTS BY A POWDER WIRE -U-  
PROCESSING DATE--30OCT70  
AUTHOR--(05)-DIKUN, V.N., CHERNOV, YU.A., PELEVICH, YU.P., DUBEN, L.V.,  
SULOVYEV, G.N.  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, SVARUCHNOYE PROIZVODSTVO, NO 3, 1970, P 19  
DATE PUBLISHED--70  
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--AUTOMATIC WELDING, WELD JOINT, WIRE, WELDING  
ELECTRODE/EUJEPS152 POWDER WIRE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1999/1298  
CIRC ACCESSION NO--AP0123257  
STEP NO--UR/0135/70/000/003/0019/0019  
UNCLASSIFIED

2/2 015

CIRC ACCESSION NO--APO123257

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TECHNOLOGY HAS BEEN DEVELOPED OF A SINGLE PASS AUTOMATIC WELDING OF TEE JOINTS USING A POWDER WIRE, IN WHICH JOINTS WITH A LEG UP TO 8 MM ARE WELDED IN A SINGLE PASS. WITH INCREASE OF THE LEG THE WELDING IS PERFORMED IN SEVERAL PASSES WITH SCRUBBING SLAG FROM JOINTS. THE WORKING CONDITIONS OF THE AUTOMATIC SINGLE PASS WELDING BY THE EPS-15,2 POWDER WIRE OF TEE JOINTS WERE DETERMINED.

UNCLASSIFIED



PELEVIN, O.V.

SPRS 59208

6-73

#### II-4. CHARACTERISTIC FEATURES OF THE BEHAVIOR OF TELLURIUM ON CRYSTALLIZATION OF GALLIUM ARSENIDE IN CONNECTION WITH THE DIAGRAM OF STATE OF THE GALLIUM-TELLURIUM SYSTEM

Article by V. R. Vagrovich, N. G. Milyutskiy, O. V. Pelevin, E. N. Mikhaylov, Moscow: Povolzhskiy, III Symposium on Processes in Solid State Polymers, Vologodskiy Kristallizatsionnyy Institut, Kuznetsk, 1972 June 1972, p 1511

Partial liquidation of the diagram of state of Ge-As-Te led to the following

Ge-As-Te, As-Te, and As-Ge-Te. Thus, the phases of gallium arsenide and tellurium do not coexist in crystallization of the gallium arsenide liquid, the crystal is a solid solution of the components Ge, As, and Te. As<sub>2</sub>Te<sub>3</sub> and As on the basis of gallium arsenide as a function of what partial crystallization belongs to. This partial crystallization of various compositions corresponds to identical quantity of tellurium and the composition of Ge-As-Te sections.

Studies by means of the radioactive indicator method of Te<sup>127</sup> and half treatment of these specimens demonstrated that the distribution coefficient of the tellurium and the effect of the tellurium content on the electrical properties of gallium arsenide crystals vary in different partial crystallization.

PELEYIN, O.V.

59208  
6-73

X-60. BEHAVIOR OF ALLOYING AD MIXTURES IN THE PRESENCE OF LIQUID EPITAXY OF GALLIUM ARSENIDE IN CONNECTION WITH THE DIAGRAMS OF STATE OF THE TERNARY SYSTEMS Ga-As-AD MIXTURE

Article by O. V. Pelevin, M. G. Mi'vinskii, B. G. Glich, M. I. Nikolayev, Moscow; Novosibirsk. In: Symposium on Protection Against a Strategic Polymers, Yuzhkovskii Khatallan I Pioner, Ruzskii, 14-17 June 1972, p. 151

A study was made of the diagram of state of the ternary systems of gallium arsenide and admixture. The standard alloying elements were selected as the admixtures — tin, donor, germanium-acceptor and iron-deep acceptor. In the investigated systems, within the framework of the quasichemical representation of the theory of solutions, the liquidus isotherms were calculated in the region of primary crystallization of gallium arsenide.

The characteristic features of the behavior of the alloying admixtures are discussed in connection with triangulation of the diagrams of state of the corresponding systems.

The alloyed epitaxial film of gallium arsenide were grown from liquid solutions the compositions of which corresponded to the liquidus isotherms.

The study of the epitaxial layers by methods of radioactive indicators and Hall measurements permitted investigation of the nature of the isothermal cross sections of the solidus surface in the region of primary crystallization of gallium arsenide.

USSR

ZAVADSKIY, YU. I., KORNILOV, B. V., PELEVIN, O. V.

"Induced Impurity Photoconduction and Optical Properties of Semi-insulating Chromium-Doped Gallium Arsenide"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 993

Abstract: A study was made of the spectral dependence of the impurity photoconductivity stimulated by natural illumination, optical absorption, cathode luminescence and photoconductivity of semi-insulating chromium-doped gallium arsenide. Along with the chromium level of  $E_c = 0.795$  electron volts, in the GaAs lattice there is a center with an activation energy of 0.62 electron volts. The phenomenon of induced impurity photoconductivity with a threshold of  $\sim 0.37$  electron volts was detected under the conditions of constant natural illumination. The magnitude of the activation energy of chromium determined by the peak cathode luminescence band at  $T = 77^\circ\text{K}$  is 0.795 electron volts. The experimentally determined spectral dependence of the impurity absorption coefficient proportional to the chromium concentration is compared with the theoretical model of photoionization using an approximation of a strong bond. The explanation of the experimental data is presented in terms of local levels

1/2

USSR

ZAVADSKIY, UY. I., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 993

without using the impurity band model.

The complete text of this report can be obtained by requesting report number 3333-71 Dep., 19 August, 1971 from the following address: Moscow, A-219, Baltiyskaya, 14, Division of Scientific Papers and Reference Information of the All Union Institute of Scientific and Technical Information.

2/2

- 203 -

USSR

UDC[537.226+537.311.33]:[537+535]

ZAVADSKIY, YU. I., KORNILOV, B. V., and PELEVIN, O. V.

"Induced Impurity Photoconductivity and Optical Properties of Semi-Insulating Chromium-Doped Gallium Arsenide"

Indutsirovannaya primesnaya fotoprovodimost' i opticheskiye svoystva poluizoliruyushchego arsenida galliya, legirovannogo kromom (cf. English above, Editorial Board of the Journal, Fiz. i tekhn. poluprovodnikov (Semiconductor Physics and Technology), Academy of Sciences USSR), Leningrad, 1971, 20 pp, ill., bibliography with 17 titles, No 3333-71 Dep (from FZh-Fizika, No 1, Jan 72, Abstract No 1YE1504Dep by authors)

Translation: A study was made of the spectral dependence of impurity photoconductivity, stimulated by self-illumination, optical absorption, and cathodoluminescence of semi-insulating Cr-doped GaAs. It was established that, besides the Cr level of  $E_c = 0.795$  ev, there is in the GaAs lattice a center with activation energy of 0.62 ev. The authors found the phenomenon of induced impurity photoconductivity with a threshold of  $\sim 0.37$  ev under conditions of steady self-illumination. The magnitude of Cr activation energy, determined from the maximum of the cathodoluminescence band, given  $T = 77^\circ K$ , equals 0.795 ev. The experimentally determined spectral dependence of the impurity absorption coefficient, which is proportional to Cr concentration, is compared with  $1/2$

USSR

ZAVADSKIY, YU. I., et al., Indutsirovannaya primesnaya fotoprovodimost' i opticheskiye svoystva poluizoliruyushchego arsenida galliya, legirovannogo khromom, 1971, No 3333-71 Dep

the theoretical model of photoionization using strong bond approximation. An explanation of the experimental data is made in terms of local levels without drawing on the impurity band model.

2/2

Acc. Nr.

AP0054912

Abstracting Service:  
CHEMICAL ABST. 6-70

Ref. Code

P UR0070 /

115479s Heterogeneity of iron-doped gallium arsenide crystals. Gimel'farb, F. A.; Girich, B. G.; Mil'yidskii, M. G.; Omel'yanovskii, E. M.; Pelevin, O. V. (USSR). *Kristallografiya* 1970, 15(1), 112-18 (Russ). The distribution of Fe in Fe-doped GaAs crystals was studied by various methods. At impurity concns. of  $\sim 10^{18}/\text{cm}^3$ , a 2nd structural component with a const. molar ratio of  $\text{GaAs:Fe}_2\text{As} = 23.4:76.6$  appears. A model describing the mechanism of appearance of this component is proposed. It consists of capture by the crystn. front of a drop of the melt which eventually crystallizes when its compn. becomes identical to that of the eutectic mixt. The dislocation concn. of the matrix crystal is higher in the vicinity of the inclusion. The 2nd structural phase, however, has practically no effect on the elec. properties of the semi-insulating GaAs crystals.  
B. Soptrajanov

REEL/FRAME  
19840116

CK

18

PELEVIN, V. N.

485 60572  
14 Nov 73

(3)

STUDY OF FLUCTUATIONS OF UNDERWATER IRRADIANCE

Article by K. S. Shifrin, V. N. ~~Pelevin~~, and A. I. ~~Smul'kin~~  
Leningrad. ~~Otika Okeana i Atmosfery~~, Russian, Izdatel'stvo  
Nauka, 1972, pp 174-181

Investigation of the structure of a natural light field on different horizons in the ocean is an important problem of the optics of the ocean. Information about the spectral, angular and polarization characteristics of the field is important both in itself and as the starting information for optical measurements of sounding the ocean.

The simplest characteristic of the light field is the irradiance of the horizontal surface  $E$ . Observations have shown that the value of  $E(z)$  ( $z$  = depth) experiences considerable fluctuations in time. Consequently, for a complete description of natural irradiance in the ocean it is necessary to know not only the mean values of  $E$  on different horizons but also its fluctuations.

The mean irradiance has already been the object of investigations for many years. In particular, it has been established that it decreases with depth as  $\exp(-\alpha z)$ . It has been established that the vertical attenuation ( $\alpha$ ) has been established in various regions of the world ocean. As for investigations of fluctuations of irradiance, data on that question are very scanty [1-3]. They all were obtained in enclosed bays and relate to small depths ( $z \leq 10$  meters). Measurements at great depths and in the open ocean are not known to us. In the present article a description is given of a procedure for measurements of fluctuations of underwater irradiance in open regions of the ocean at depths of 200-300 meters. Also presented in it are some data obtained in measurements of fluctuations of irradiance made at four points of the Pacific Ocean at depths  $z \leq 100$  meters. Those measurements were made on the fifth journey of the "Dmitriy Mendeleev" in 1971. Table 1 presents the values of parameters characterizing the experimental conditions.



PELEVIN, V. N.

19 Nov 73

(4)

EXPERIMENTAL STUDY OF DISTORTION OF A LASER  
LIGHT PULSE DURING PROPAGATION IN THE SEA

Article by I. I. Kalinin, V. N. Pelevin, A. L. Skrebin, and  
D. M. Sherbaty, Leningrad. Optika Okeana i Atmosfery, Russian,  
Izdatel'stvo Nauka, 1972, pp 168-174.

The development of pulsed lasers has not only intensified interest in the nonstationary problem of scattering but has also put in the hands of investigators a tool for studying but has also a laser with a burst lasting units of tens of nanoseconds, by using elements propagating with high time resolution of splitting a light signal, the medium or in the number of acts of scattering experienced.

In [1, 2] the advisability was pointed out of representing the matrix of radiation transfer  $\mu_{12}$  from point 1 to point  $\mu_{1k}$  (1), corresponding to the various lengths of the matrices from point to point 2:  $\mu_{1k} = \int_{\mu_{12}} w_{1k}(0) d\mu$ .

Such an approach permits decomposing the transfer matrix by degrees of probability of quantum survival and facilitates calculation of scattering of increasing multiplicity.

The development of pulsed technology along the path of reduction of the signal length to the limit beyond which it would be possible to receive it as a  $\delta$ -pulse can lead, if suitable polarizers and analyzers are used, to obtaining the components of the  $\mu_{12}$  (1) transfer matrix experimentally.

1/2 017  
UNCLASSIFIED  
TITLE--THE UNDERWATER IRRADIANCE METER FMPD-64 AND ITS USE FOR THE OPTICAL  
STUDIES IN THE SEA -U-  
AUTHOR--(02)-KARELIN, A.K., PELEVIN, V.N.  
PROCESSING DATE--02OCT70  
COUNTRY OF INFO--USSR  
SOURCE--OKEANOLOGIYA, 1970, VOL 10, NR 2, PP 369-373  
DATE PUBLISHED-----70  
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--SEA WATER, LIGHT ABSORPTION, UNDERWATER EQUIPMENT, UNDERWATER  
OPTICS, INDEX, OCEANOGRAPHIC INSTRUMENT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1990/1281  
CIRC ACCESSION NO--AP0109365  
STEP NO--UR/0213/70/010/002/0369/0373  
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109365

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW DESIGN OF THE UNDERWATER IRRADIANCE METER IS DESCRIBED. THE INSTRUMENT ENABLES ONE TO OBTAIN A COMPLETE SET OF DATA NECESSARY FOR COMPUTING LIGHT ABSORPTION INDEX OF THE SEA WATER. SOME EXAMPLES OF THE DETERMINATION OF THE ABSORPTION INDEX IN THE SEA ARE PRESENTED. FACILITY: INSTITUT OKEANOLOGII IM. P. P. SHIRSHOVA AN SSSR.

UNCLASSIFIED

PELEVIN, Yu. V.

SYSTEM FOR AUTOMATIC MONITORING OF TECHNICAL INDICES OF LONG DISTANCE  
BROADCAST CHANNELS

by Yu. V. Pelevin, senior engineer, of the scientific research

institute of radio engineering, Ministry of the Scientific Research  
Design Bureau of the USSR Ministry of Communications, Moscow, USSR  
Russian, No 11, November 1972, pp 26-28

Directives of the 24th Party Congress specify: "to continue  
improvement in the management of the national economy." In  
the field of communications one of the most important tasks  
is to provide automatic (operating and accurate) monitoring  
of the continuity and technical indices of long distance  
broadcast channels (LBC). The saving from putting into  
operation such a system on the network of channels of the  
class-1 quality will amount for the country to about 150,000  
rubles a year.

Science Is To Control

With the continuously increasing volume of radio broadcasting and  
the length of long distance channels used for its transmission it is ex-  
pedient to change over to an automated system of control and checking-up  
with this system reducing the unproductive losses to a minimum. One of  
the first steps in solving the problem of automation was the development  
of a system for an automatic monitoring of the technical indices of the  
long distance broadcast channels (LBC).

An analysis of the operation of the channels showed that in order  
to obtain continuous objective information on the technical condition of  
the broadcast network the automatic-monitoring devices must record the  
deviations from the standard of the following parameters which determine  
the quality of the passage of programs over the channels: transmission  
and continuity factor of a channel, the noise level, the coefficient of

JPRES  
#58240  
15 Feb 73  
(2)

USSR

UDC 576.31

GOTLIB, V. Ya., PELEVINA, I. I., AFANAS'YEV, G. G., and LIPCHINA, I. P., Institute of Chemical Physics, Academy of Sciences USSR, Moscow

"Alteration of the Lethal Irradiation Effect by Means of Chemical Compounds Under Conditions of Cell-Culturing Outside an Organism"

Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 6, Jun 70, pp 1,367-1,370

Abstract: The possibility of modifying cellular radiosensitivity in tissue culture by means of an inhibitor of radical reactions -- propyl gallate -- was investigated. LL cells were obtained from NK<sub>1</sub> mice, and seven-day monodisperse cell cultures were used. Irradiation was conducted 18 hrs after inoculation of media. PG was added 18 hrs and 15 min prior to irradiation. After 10 days of culturing, cells were stained with toluidine blue and counted. It was determined that identical doses of GP had different effects on the cells, depending on the time of contact prior to irradiation. Contact of 18 hrs resulted in increased radiosensitivity of the experimental cell population and a higher kill ratio, whereas 15 min of exposure resulted in radio-protective action. It was assumed that the metabolic products of PG were important in the sensitization effect. During short exposure, a reaction took place between PG and the radicals formed during irradiation, resulting in their deactivation.

1/1

USSR

UDC 577.391:616-006

PELEVINA, I. I. and AFANAS'YEV, G. G., Institute of Chemical Physics, Moscow, Academy of Sciences USSR

"Possibilities of Increasing the Radiosensitivity of Cells by Chemical Compounds"

Moscow, Uspekhi Sovremennoy Biologii, No 1(4), pp 55-71

Abstract: The article is a review of the literature on the mechanisms for increasing the radiosensitivity of bacterial and mammalian cells and on the possibility of sensitizing tumor cells. The methods discussed include increasing oxygen tension, lowering the level of cellular protection, change in the molecular structure of DNA, and depression of the repair systems. The capacity for sensitization is limited to the inherent properties of the populations because individual cells as well as organisms are heterogeneous with respect to sensitivity to chemical agents and radiation, as manifested by the differences in their reaction to these factors. The lethal effect of irradiation on cell populations or organisms and the effectiveness of combined exposure to chemical agents and irradiation are confined to the resistant portion of the cell populations or resistant organisms. Consequently,

1/2

USSR

PELEVINA, I. I. and AFANAS'YEV, G. G., Uspekhi Sovremennoy Biologii, No 1(4)  
pp 55-71

no one substance or method now known can achieve an identical level of sensitization for a given biological system, i.e., several methods have to be combined. For example, in the case of halogen-substituted deoxyuridins, conditions must be created for all the cells to enter the phase of DNA synthesis; cells that do not synthesize DNA might be sensitized by substances that act at the level of cellular protection; anoxic cells can be treated with stable free radicals, etc.

2/2

AA0051894

PELEYEV, A.I.

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

237436 ORGANIC MATERIALS SLIDING FRICTION INTENSITY  
measuring device, consisting of a frame (1),  
d.c. motor (2), handle (3) for continuous drive  
speed control, jacket (4), pipe connector (5) for  
coolant supply, disc (6), specimen holder (7) with  
a traverse (8) with vertical grooves (9), a ground  
plunger (10) with a rectangular platform for weights  
at its top, two springy elements (11) carrying  
strain gauges, a supporting plate (12), tachogener-  
ator (13), flexible shaft (14), nut (15), cutter  
holder (16), thermometer sleeve (17) and a pipe  
connector (18) for the coolant discharge.

The electric motor (2) with the disc (6)  
mounted on its shaft, can vary its speed from 0 to  
8000 rpm. The speed is controlled by a tap chang-  
ing switch on a selenium rectifier in the power  
pack, and by the handle (3). The coolant is  
projected by a jet directly under the point of  
contact of the friction pair. The ribs on the

2/70

11

1/3

19820373



AA0051894

disc underside prevent the coolant from splashing, and its throwing out by the centrifugal force.

The device is provided with a set of exchangeable discs of different materials and with different surface roughness. The cutter held in the holder (16) continuously cleans the disc surface during its operation.

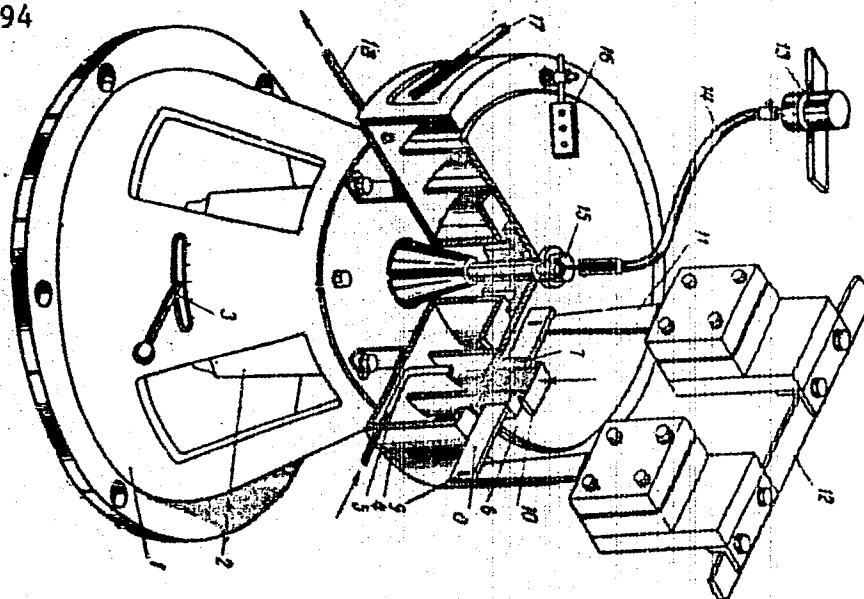
24.10.67 as 1192539/28-13.PELEEV.A.I.et alia.(1.7.69)  
Bul 8/12.2.69. Class 42k. Int.Cl.G Oln.

AUTHORS: Peleyev, A. I.; Proselkov, V. G.; Klimenko, M. N.

43

19820374

AA0051894



5/3

19820375

jc

USSR

UDC 62.620+549.212

PELINSKIY, A. A., TARABANOV, A. A., and LAZAREV, G. Ye., Kishinev-Moscow  
"Test Results from the SG-T Material"

Moscow, Mashinovedeniye, No 2, Mar-Apr 71, pp 92-98

Abstract: Friction tests on SG-T type silicon impregnated graphite and graphitic carbon and silicon impregnated graphite in various liquid media (water, sulfuric acid, nitrous acid, etcetera) showed that the intensity of wear in SG-t is 5-10 times less than in 2P-1000 graphitic carbon and 100 times less than in materials on a Teflon-4 base. Numerous experiments showed that the thrust bearings are efficient in a friction pair of SG-T and SG-T at specific loads of 200 kg/cm<sup>2</sup> and more at 3000 rpm.

The tests on silicon impregnated graphite in circulating pumps and in pumps used for the transfer of aggressive liquid media recommend this material for wide-spread industrial utilization.

The results of the tests showed that SG-T silicon impregnated graphite reveals a high efficiency at friction points operating both in neutral liquid media and in a number of aggressive media.

1/2

USSR

PELINSKIY, A. A., et al., Mashinovedeniye, No 2, Mar-Apr 71, pp 92-98

Block-schematics, photographs, and tables are used to illustrate the findings.

This article cites four literature references and contains five figures and two tables.

2/2

- 37 -

1/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--SOME CLINICAL ASPECTS OF SUICIDAL TENDENCIES IN PSYCHOPATHIC  
PERSONALITIES -U-  
AUTHOR--PELIPAS, V.YE. *P*  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL NEVROPATOLOGII INPSIKHIATRII IMENI S. S. KORSAKOVA, 1970,  
VOL 70, Nk 6, PP 914-919  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--PSYCHIATRY, PSYCHOPATHOLOGY, PUBLIC HEALTH, SUICIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/1198 STEP NO--UR/0246/70/070/005/0914/0919  
CIRC ACCESSION NO--AP0126800  
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0126800

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MATERIAL OF POSTHUMOUS  
FORENSIC DOCUMENTS WAS ANALYZED FROM THE STANDPOINT OF CLINICAL ASPECTS  
OF SUICIDAL ACTS IN PSYCHOPATHIC PERSONALITIES. THE TOTAL AMOUNT OF  
SUCH CASES WAS EQUAL TO 30PERCENT OF ALL THE DECEASED. THE AUTHOR  
STRESSES THE ASYCHO REACTIVE CHARACTER OF THE SUICIDAL ATTEMPTS IN  
PSYCHOPATHS, THEIR INADEQUACY TO ACTUAL REASONS AND THEIR RELATION TO  
TRANSIENT EXACERBATIONS OF PSYCHOPATHY. FACILITY: TSENTRAL'NYY  
NAUCHNO-ISSLED. INSTITUT SUDEBNOY PSIKHIATRII IM V. P. SERBSKOGO, MZ  
SSSR, MOSKVA.

UNCLASSIFIED

## Oscillators and Modulators

USSR

UDC: 621.373.52

PELIPENKO, N. I., Institute of Automation

"Ultralow Frequency Oscillator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6, 1970, p 33, patent No 262162, filed 2 Jul 68

Abstract: This Author's Certificate introduces an ultralow frequency oscillator which contains a symmetric flip-flop whose counter input is connected to the output of a retarded squegging oscillator. Also incorporated in the device are an interrogating squegging oscillator, a timing capacitor and diode-transformer rectifiers. As a distinguishing feature of the patent, stability is improved and the repetition period of the generated pulses is extended by connecting the timing capacitor between the two points of connection of the discharge resistors and the cathodes of the diodes. The diode anodes are connected to the outputs of the symmetric flip-flop, and the second outputs of the discharge resistors are connected to the supply bus. The leads of the timing capacitor are also connected to the inputs of the two diode-transformer rectifiers. The diode anodes in the rectifiers are connected to the outputs of two doubled resistive dividers which are connected in parallel with the collector of the interrogating squegging oscillator.

1/1

USSR

UDC 51

BERDICHEVSKIY, V. V., BORODIN, YU. M., KRIVVOY, F. F., PELIPEY, L. N.

"Computer Algorithms for Obtaining the Summary Materials List"

V sb. Sistemotekhnika (Systems Engineering--collection of works), Kiev, 1971,  
pp 130-137 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V395)

No abstract

1/1



USSR

UDC 681.326.77(088.8) 681.325.65.181.48

PELIPEYKO, V. A., PLOKS, V. O., et al.

"Device for Testing Microelectronic Logic Circuits"

USSR Author's Certificate No 273343, Filed 27/01/69, Published 18/09/70  
(Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i  
Vychislitel'naya Tekhnika, No 5, 1971, Abstract No 5B133P)

Translation: There are well-known devices for testing complex microelectronic logic circuits containing a control unit, input, output and memory registers, a programmable power supply, an amplitude selector, a digital comparison circuit, an input signal shaper, a starting unit, an indicator unit, a number printer, and input and output devices. Shortcomings of such devices include either complete absence of any possibility of testing the dynamic characteristics of complex logic circuits or severe limitation of capabilities in this respect by the comparatively low speed of the memory and control devices, which cannot perform the operations of calculation and comparison and recording of test information at the cycle frequency required for dynamic testing of microelectronic logic circuits. The purpose of this invention is to increase the program flexibility of the static and dynamic tests, expand the capabilities for dynamic investigations of microelectronic

1/2

USSR

PELIPEYKO, V. A., et al., USSR Author's Certificate No 273342, Filed 27/01/69, Published 18/09/70 (Translated from Referativnyy Zhurnal Avtomatika, Tele-mekhanika i Vychislitel'naya Tekhnika, No 5, 1971, Abstract No 5B133P)

logic circuits in the nanosecond range, and increase the effectiveness of its utilization in laboratory and production conditions. This is achieved by including a time selector in the device -- the inputs of which are connected to the outputs of the circuit being tested, while its outputs are connected to the inputs of the amplitude selector -- and a controlled delay line -- the input of which is connected to the shaping output of the starting unit, while its output is connected to the controlling input of the time selector; the controlling input is connected to the control unit.

2/2

- 92 -

P  
USSR

UDC: 621.327.53

PELIPEYKO, V. A., Institute of Electronics and Computer Technology, Academy of Sciences of the Latvian SSR

"A Classifier Meter for Digital Integrated Circuits"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 12, 1970, Author's Certificate No 266946, filed 9 Jan 69, p 67

Abstract: This Author's Certificate introduces a classifier meter for digital integrated circuits. The meter contains a program unit, control module, programmed power supply, input action unit, input and output commutators, signal shaper, equivalent load unit, classification unit, logical analyzer, comparator, reference voltage unit, digital voltmeter, and digital printout. As a distinguishing feature of the patent, the range of functional possibilities of the classifier meter is extended by adding a self-adjustment unit and operational program device connected in series. The input of the self-adjustment unit is connected to the output of the classification unit, and the output of the operational program device is connected to the controlling input of the program unit.

1/1

P  
USSR

UDC: 621.37.53

PELIPEYKO, V. A., PLOKS, V. O., ZHULYAKOV, V. K., PODVISOTSКИЙ, Yu. S., Institute of Electronics and Computer Technology of the Academy of Sciences of the Latvian SSR

"A Device for Checking Microelectronic Logic Circuits"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzy, Tovarnyye Znaki, No 20, 1970, Author's Certificate No 273542, filed 27 Jan 69, p 68

Abstract: This author's certificate introduces a device for checking micro-electronic logic circuits. The device contains a control module, input, output and memory registers, a programed power supply, amplitude selector, digital comparison circuit, input signal shaper, actuating unit, indicator unit, digital printer and input and output devices. As a distinguishing feature of the patent, monitoring precision and effectiveness are improved by adding a time selector whose inputs are connected to the outputs of the circuit to be checked, while the time selector outputs are connected to the inputs of the amplitude selector. Also incorporated in the checker is a controlled delay line whose input is connected to the shaping input of the actuating unit, while the output is connected to the controlling input of the time selector, and the controlling input is connected to the control module.

1/1

UNCLASSIFIED

PROCESSING DATE--27NOV70

1/2 017

TITLE--DISTURBANCE OF KIDNEY FUNCTIONING FOLLOWING BURNS -U-

AUTHOR--PELISOV, M.G.

COUNTRY OF INFO--USSR

SOURCE--VOENNO MED ZH (1): 69-72. 1970

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BURN, KIDNEY FUNCTION, KIDNEY BLOOD CIRCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3009/0136

STEP NO--UR/0177/70/000/001/0069/0072

CIRC ACCESSION NO--AP0139001

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 017

CIRC ACCESSION NO--AP0139001

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDIES WERE MADE OF 125 BURN VICTIMS, 61 DURING RECOVERY AND 64 1 YR OR LONGER AFTER THE BURN. DETERMINATIONS WERE MADE OF GLOMERULAR FILTRATION, CANALICULAR REABSORPTION AND EFFECTIVE RENAL PLASMA CIRCULATION. FUNCTIONAL DISTURBANCE OF KIDNEY ACTIVITY IS SOMEWHAT SIMILAR IN BOTH GROUPS. THESE INCLUDE A REDUCTION IN KIDNEY PLASMA CIRCULATION AND GLOMERULAR FILTRATION, AND EXPRESSED DISTURBANCE OF KIDNEY BLOOD CIRCULATION. GREATEST CHANGES WERE OBSERVED IN MORE SEVERA CASES WHICH ALSO SHOWED LIVER INFLAMMATION AND DYSTROPHY.

UNCLASSIFIED

USSR

UDC: 547.558.1+547.241

LOZINSKIY, M. O., KUKOTA, S. N., and PEL'KIS, R. S., Institute of Organic Chemistry, Academy of Sciences of the Ukrainian SSR

"Research in the Halogen-Substituted Carboxylic Acid Series. III. Synthesis of Phosphorans Which Contain Arylhydrazone Groups"

Leningrad, Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2893-2896

Abstract: The authors describe synthesis and properties of  $\alpha$ -arylhydrazono- $\beta$ -oxocarboethoxybutyryl- $\gamma$ -triphenyl[and trioxymethyl]-phosphonium bromides. The initial reagents were arylhydrazones of ethyl ether of bromoacetylglyoxylic acid, triphenylphosphine, and trioxymethylphosphine. The resultant products are fine yellow crystals, partly with a metallic luster, which are readily soluble in lower alcohols and dimethylformamide, and poorly soluble in benzene, ether and acetone. When salts (I-VI) are reacted in an aqueous solution of soda at 40-55°C for 6-8 hours, or with triethylamine in tetrahydrofuran, the corresponding phosphorans are produced in the form of yellow crystals which dissolve in many organic solvents. These phosphorans react with carbonyl compounds in a number of electrophilic agents. Compounds (VIII-X) are spermacides.

1/1

1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--HALOCHROMISM OF 1,5-DIARYL,3,SUBSTITUTED FORMAZANS -U-  
AUTHOR-(02)-DUBENKO, R.G., PELKIS, P.S. *P*  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1101-4  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--UV SPECTRUM, BENZENE DERIVATIVE, ORGANIC AZINE COMPOUND,  
AROMATIC NITRO COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3006/1351 STEP NO--UR/0366/70/006/005/1101/1104  
CIRC ACCESSION NO--AP0135025  
UNCLASSIFIED



2/2 016

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135025

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROTONATION OF P-RC SUB6 H SUB4 N:NCR PRIME1 :NNHC SUB6 H SUB4 R PRIME2 -P (I) IN H SUB2 SO SUB4 SOLNS. SHIFTS THEIR UV SPECTRA MAX. BY 125-250 NM INTO LONGER LAMBDA REGIONS AS COMPARED WITH THE SPECTRA OF I IN ALC. THE MAX. OF UV LIGHT ABSORPTION OF P-ETOC SUB6 H SUB4 N:NC(CN):NNHC SUB6 H SUB4 NO SUB2 -P IS EQUAL TO THE ARITHMETIC MEAN OF I (R EQUALS ETO, R PRIME1 EQUALS CN) AND I (R EQUALS NO SUB2, R PRIME1 EQUALS CN) ABSORPTIONS. THE SPECTRA OF I (R IS H, ME, ETO, OR NO SUB2 R PRIME1 IS NO SUB2 OR CN) ARE GIVEN.

FACILITY: INST. ORG. KHIM., KIEV. USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--REACTION OF ARYLDIAZONIUM SALTS WITH ACETOTHIOACETIC ACID  
ARYLAMIDES -U-  
AUTHOR--(03)-NESYNOV, YE.P., BESPROZVANNAYA, M.M., PELKIS, P.S.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ORG. KHIM. 1970, 6(4), 805-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--AMIDE, ORGANIC SALT, ACETIC ACID, THIOL, CONDENSATION  
REACTION, ORGANIC AZOLE COMPOUND, HYDROLYSIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/2156 STEP NO--UR/0366/70/006/004/0805/0809  
CIRC ACCESSION NO--AP0125739  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125739

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDENSATION OF MECOCH SUB2 C(S)NHPH WITH XC SUB6 H SUB4 N SUB2 CL IN AQ. ACETONE SOLN. CONTG. ACONA GAVE MECOC(:NNHC SUB6 H SUB4 X)C(S)NHPH (I). THE REACTION OF I WITH X PRIME1 C SUB6 H SUB4 N SUB2 CL IN ALK. SOLN. GAVE MECOC(:NNHC SUB6 H SUB4 X)C(:NPH)SC SUB6 H SUB4 X PRIME1 (II). THE HYDROLYSIS OF I GAVE X PRIME1 C SUB6 H SUB4 SH. THE REACTIONS OF II WITH H SUB2 NNH SUB2.H SUB2 O GIVE MECOC(CONHPPH):NNHC SUB6 H SUB4 X, 3,METHYL,4,ARYLHYDRAZONO,5,ANILINOPYRAZOLE, AND MEC(:NNH SUB2) C(:NNHC SUB6 H SUB4 X)C(:NPH)NHNH SUB2 (III). THE REACTION OF BZCL WITH III GAVE MEC(:NNHBZ)C(:NNHC SUB6 H SUB4 X) C(:NPH)NHNHBZ. FACILITY: INST. ORG. KHIM., KIEV, USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ARYLSULFONYLACETONITRILES. III. ARYLSULFONYLCYANTHIOACETIC ACID  
ARYLAMIDES IN THE JAPP-KLINGEMANN REACTION. HYDROLYTIC SPLITTING OFF OF  
AUTHOR--(04)--NEPLYUYEV, V.M., USENKO, YU.N., DUBENKO, R.G., PELKIS, P.S.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ORG. KHIM. 1970, 6(4), 801-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--THIOL, ACETIC ACID, ORGANIC NITRILE COMPOUND, ANILINE,  
AROMATIC CARBOXYLIC ACID, AMIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/2154 STEP NO--UR/0366/70/006/004/0801/0805  
CIRC ACCESSION NO--AP0125737  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125737

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE REACTIONS OF P-XC SUB6 H SUB4 SO SUB2 CH(CN)CSNHR WITH P-X PRIME1 C SUB6 H SUB4 N SUB2 CL IN AN ALC.-WATER MIXT. CONTG. ACONA GAVE P-XC SUB6 H SUB4 SO SUB2 C(CN):NNHC SUB6 H SUB4 X PRIME1-P AND RNHC(S)OH. SIMILARLY, PHNHCCH(CN)CO SUB2 ET REACTED WITH P-X PRIME1 C SUB6 H SUB4 N SUB2 CL TO GIVE P-X PRIME1 C SUB6 H SUB4 NHN:C(CN)CO SUB2 ET PLUS PHNHC SUB2 H. IN THE COURSE OF THE REACTION, PHNHC SUB2 H DECOMPD. TO PHNH SUB2 AND CO SUB2. ALSO, PHNHC(S)CH(CN)CO SUB2 ET REACTED WITH P-X PRIME1 C SUB6 H SUB4 N SUB2 CL TO GIVE P-X PRIME1 C SUB6 H SUB4 NHN:C(CN)CO SUB2 ET, PHNH SUB2, H SUB2 S, AND CO SUB2. THESE REACTIONS INVOLVE THE INTERMEDIATE P-XC SUB6 H SUB4 SO SUB2 C(CN)(Y)N:NC SUB6 H SUB4 X PRIME1-P COMPLEXES IN WHICH THE FACILITY FOR THE SPLITTING OFF Y DECREASES IN ORDER H GREATER THAN CSNHR GREATER THAN OR EQUAL TO CONH SUB2 GREATER THAN CONHR GREATER THAN CO SUB2 H GREATER THAN COR PRIME1 GREATER THAN CO SUB2 R PRIME1 GREATER THAN BR APPROXIMATELY EQUAL TO NO SUB2 GREATER THAN CN GREATER THAN SO SUB2 R GREATER THAN R APPROXIMATELY EQUAL TO R PRIME1 (R AND R PRIME1 ARE AROMATIC AND ALKYL GROUPS RESP.). FACILITY: INST. ORG. KHIM., KIEV, USSR.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--REACTION OF ARYLDIAZONIUM SALTS WITH UNSUBSTITUTED AMIDES AND  
THIAMIDES OF CARBOXYLIC ACIDS -U-  
AUTHOR--(03)-NESYNOV, YE.P., BESPROZVANNAYA, M.M., PELKIS, P.S.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ORG. KHIM. 1970, 6(3) 540-4  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--DIAZONIUM SALT, CARBOXYLIC ACID, AMIDE, ORGANIC SULFUR  
COMPOUND, MOLECULAR STRUCTURE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1991/2572 STEP NO--UR/0366/70/006/003/0540/0544  
CIRC ACCESSION NO--AP0112566  
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112566  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE REACTION OF SC SUB6 H SUB4 N  
SUB2 CL (X EQUALS H, O-CL, P-CL, M-ME, M-ND SUB2, P-ETO, P-CD SUB2 ET,  
OR P-BR) WITH PHNHC(:S)NH SUB2 (I) IN NAOH SOLN. GAVE 9-50PERCENT  
PHN:C(NH SUB2)SC SUB6 H SUB4 X (II) AND ALSO THE CORRESPONDING PHN:C(SC  
SUB6 H SUB4 X)NH:NC SUB6 H SUB4 X (III). THE REACTION OF II WITH XC  
SUB6 H SUB4 N SUB2 CL ALSO GAVE III. THE REACTION OF II WITH XC  
PHNHC(SNA):NH AS THE INTERMEDIATE SINCE IN ACIDIC SOLN. I ARE NOT  
FORMED. SIMILARLY, IN AQ. NAOH SOLN. RCONH SUB2 EXIST AS RC(OA):NH  
WHICH REACT WITH XC SUB6 H SUB4 N SUB2 CL GIVING RC(OC SUB6 H SUB4  
X):NN:NC SUB6 H SUB4 X (R AND X GIVEN): ME, P-CL; PH, H; PH, O-CL.  
ALSO PHNHNHC(:S)NHCH SUB2 CH:CH SUB2 PLUS NAOH IN EQUILIBRIUM  
PHNHN:C(SNA)NHCH SUB2 CH:CH SUB2 (IV). THE REACTION OF IV WITH PHN SUB2  
OAC GAVE A MIXT. OF PHNHN:C(SPH)-NHCH SUB2 CH:CH SUB2 AND  
PHN(N:NPH):N:C(SPH)NHCH SUB2 CH:CH SUB2 (V) (THE STRUCTURE  
PHNHN:C(SPH)N(N:NPH)CH SUB2 CH:CH SUB2 IS NOT EXCLUDED FOR V).

UNCLASSIFIED

USSR

UDC 547.751'873.07

DMITRIUKHA, V. S., and PEL'KIS, P. S., Institute of Organic Chemistry, Academy of Sciences UkrSSR, Kiev

"Studies in the Series of 1,2,4-Triazino/6,5-b/indole Derivatives. I. Synthesis and Conversions of 3-Mercapto-1,2,4-triazino/6,5-b/indole"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 72, pp 852-854

Abstract: Isatin-2-thiosemicarbazone (I) free of the 3-isomer was prepared by reacting at room temperature the O-methyl ether of isatin with thiosemicarbazide. The pure compound I prepared in this manner could be cyclized to 3-mercapto-1,2,4-triazino/6,5-b/indole (II) by boiling in 1 N NaOH for 30 min instead of heating at 50° for 9 hrs. The following new derivatives of 1,2,4-triazino/6,5-b/indole were prepared. On treatment of II with MeI, the corresponding 3-methylthio compound was obtained. The reaction of II with acetic anhydride led to 2,9-diacetyl-3-thioxo-2,3-dihydro-1,2,4-triazino/6,5-b/indole. By reacting II with hydrazine hydrate, 3-hydrazino-1,2,4-triazino/6,5-b/indole (III) was prepared. The reactions of III with benzaldehyde and p-nitrobenzaldehyde led to 3-benzylidenehydrazino- and 3-(p-nitrobenzylidenehydrazino)-1,2,4-triazino-/6,5-b/indole, respectively. By reacting III with phenyl isothiocyanate, 3-4'-phenylthiosemicarbazido-1,2,4-triazino/6,5-b/indole (IV) was obtained. The reactions

1/2



USSR

DMITRIUKHA, V. S. and PEL'KIS, P. S., Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 72, pp 852-854

of III with p-bromophenyl and m-nitrophenyl isothiocyanates led to the respective analogs of IV. The synthesis of derivatives of 1,2,4-triazino/6,5-b/indole is of interest, because many compounds of this class have a pronounced physiological activity.

2/2

34

USSR

UDC 547.759.3'873.07

DMITRIUKHA, V. S., and PEL'KIS, P. S., Institute of Organic Chemistry, Academy of Sciences UkrSSR, Kiev

"Studies in the Series of 1,2,4-Triazino/6,5-b/indole Derivatives. II. Synthesis and Properties of 3-Substituted 1,2,4-Triazacarbazoles"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 72, pp 855-857

Abstract: A simple method for the preparation of isatin- $\alpha$ -semicarbazone (I) was developed, which is analogous to that for the preparation of isatin- $\alpha$ -thiosemicarbazone described in a preceding communication by the authors (Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 72, pp 852-4) and is based on the reaction of the O-methyl ether of isatin with semicarbazide hydrochloride in the presence of an equimolar amount of Na acetate. I is a starting material for the synthesis of 3-hydroxy-1,2,4-triazacarbazole (II). By reacting II with  $\text{POCl}_3$ , 3-chloro-1,2,4-triazacarbazole (III) was prepared for the first time. III was reacted with primary amines  $\text{NH}_2\text{R}$  ( $\text{R} = \text{Ph}, \text{C}_6\text{H}_4\text{OMe-o}, \text{CH}_2\text{CH}_2\text{OH}$ ), cyclic amines  $\text{NHR}_2$  ( $\text{R}_2 = -\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2-, -\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2-$ ), hydrazine hydrate, and phenylhydrazine to prepare the respective 3-substituted 1,2,4-triazacarbazoles.

1/1

USSR

UDC 620.179.15

KOMYAK, N. I. and PELIKS, YE. A.

"Nanosecond Impulse X-Ray Unit Type RINA-1D for Non-Destructive Testing of Materials Under Unstable Conditions"

Sverdlovsk, Defektoskopiya, No 4, Jul-Aug 72, pp 127-131.

Abstract: A portable nanosecond impulse x-ray unit is described and the basic recommendations on selection of interelectrode gap in the x-ray tube and main parameters of high voltage source are presented for providing short x-ray scintillations.

Comparative tests were conducted in 1971 for the PINA-1D and an American unit--the Bend 1 X-Ray-105. Results of these tests are as follows:

	<u>RINA-1D</u>	<u>Bend 1</u>
Operating voltage in x-ray tube, kv.....	200	110
Impulse radiation time, nsec.....	20	40
Thickness of x-rayed steel, mm.....	20	4
Frequency of x-ray trace, hz.....	15	4
Focus point diameter, mm.....	3	1.5
Solid radiation angle, deg.....	150	35
X-ray tube service life, impulses.....	200,000	20,000
Weight of x-ray unit, kg.....	5	5.2

1/2

USSR

KOMYAK, N. I. and PELIKS, YE. A., Defektoskopiya, No 4, Jul-Aug 72, pp 127-131

The authors thanked V. A. TSUKERMAN and N. V. BELKIN for assistance and valuable counseling in this project. 5 figures, 1 table, 5 bibliographic references.

2/2

- 179 -

USSR

UDC 632.95

LOZINSKIY, M. O., PROTOPOPOVA, G. V., DZYUBAN, A. D., REYDALOVA, L. I.,  
KUKOTA, S. N., PEL'KOS, P. S.

"Pesticidal Properties of  $\alpha$ -arylhydrazono- $\beta$ -oxocarboethoxybutyryl- $\lambda$ -  
triphenyl (or trimethylol)-phosphonium Bromides"

Fiziol. aktivn. veshchestva. Resp. mezhved. sb. (Physiologically Active  
Substances. Republic Interdepartmental Collection), 1972, vyp. 4, pp 33-34  
(from RZh-Khimiya, No 2 (II), Feb 73, Abstract No 2N468)

Translation: The synthesis and insecticidal properties of compounds with the  
following formula are described:  $[R_3PCH_2COC(=NNHC_6H_4R')COOC_2H_5]Br(I)$  ( $R = Ph$ ,  
 $CH_2OH$ ;  $R' = H, Cl, alkyl$ ). A solution of 0.02 moles of  $Ph_3P$  in 10 ml of  $C_6H_6$   
is added to a solution of 0.02 moles of  $BrCH_2COC(COOC_2H_5)(=NNHC_6H_4R')$  in 10-  
15 ml of  $C_6H_6$ , it is mixed at  $\sim 20^\circ$  for 10 to 12 hours, the precipitate is  
separated, washed with  $C_6H_6$  and crystallized from the mixture of  $C_6H_6$  and  
acetone to obtain I ( $R'$ , the melting point in  $^\circ C$  are presented)  $R = Ph$ :  
 $H(Ia)$ , 144;  $\pi-Me$  ( $Ib$ ), 143;  $\pi-OMe$  ( $Ic$ ), 146;  $\pi-Cl$  ( $Id$ ), 167-8;  $\pi-COOMe$  ( $Ie$ ),  
177-8;  $\pi-NO_2$ , 135-6; 2- $OMe-5-NO_2$ , 146. By a reaction in dimethylformamide,  
I ( $R = CH_2OH$ ) is obtained ( $R'$  and the melting point in  $^\circ C$  are presented):  
 $\pi-Cl$ , 141-2; 2- $OMe-5-NO_2$ , 140. The Ia-e in a concentration of 0.1% have 60  
to 100% activity with respect to greenbug (*Toxoptera graminum*). The I has  
low activity with respect to red spider mites.

USSR

UDC 528.33

PELLINEN, L. P., Central Scientific-Research Institute of Geodesy, Aerial  
Photography and Cartography

"Problems in the Transmission of Coordinates in Large Triangulated Strips"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Geod. i Aerofotos"yemka,  
No 4, 1972, pp 21-30

Abstract: Effects associated with curvilinear geodetic coordinates in calculating transmission errors for quasigeoidal rises and plane coordinates at long distances are a substantial factor in geodetic work. The important case of transmission of coordinates with the help of an individual triangulation chain on whose joints the Laplace azimuths have been determined, is considered here.

On the basis of preparing astrogetic networks in the form of three-dimensional constructions, formulas are derived for estimating the error of coordinate transmission for large triangulation strips of arbitrary shape; included is a new derivation of formulas connecting geodetic coordinates found by the projection and evolution method.

In this partial case, great-circle arcs are found by the correction formulas used for the M. S. Molodenskiy evolutions.

1/1

- 154 -

USSR

UDC 528.242

PELLINEN, L.P., OSTACH, O.M., and ORLOVA, YE.M.

"Some Results of Gravimetric-Astronomical Leveling in USSR"

Moscow, Geodeziya i Kartografiya, No 6, 1972, pp 4-8

Abstract: The gravimetric-astronomical leveling method, developed by M.S. Molodenskiy in the thirties, has found a wide application in the USSR. In comparison with the astronomical leveling, by this method, using a system of polygons with 2,000-4,000 km perimeters and by given quasigeoid height, the distance between astronomical points can be essentially increased. The determination of errors of the increment of quasigeoid heights is analyzed. A comparison of gravimetric and geodetic-astronomical plumb line deviations showed for the most part of the USSR territory errors of  $\pm 0.5$  and of up to  $\pm 1.2$  in mountainous regions. A new simplified calculation method of quasigeoid increments described by one of the authors (Ostach, O.M., Referativnyy Sbornik, Central Scientific Research Institute, Aerial Surveying and Cartography, No 6, 1970) is indicated. The mean square errors of quasigeoid heights at various network points of the polygon, relative to the initial points and with accounting for leveling and other errors, did not exceed  $\pm 2$  m for the most part of the USSR territory and  $\pm 6$  m in the most distant regions. The quasigeoid heights were interpolated inside each polygon by means of gravimetric heights electronically computed by integration in the 1,000-2,000 km zone. The arising errors by this additional operation did not exceed  $\pm 1.5$  m. One illustration, five formulas, eleven bibliographic references.

Acc. Nr: **AP0034718**

Ref. Code: UR 0241

PRIMARY SOURCE: Meditsinskaya Radiologiya, 1970, Vol 15,  
Nr 2, pp 29-34

THE RESULTS OF CHEMORADIATION TREATMENT OF OSTEOGENIC  
SARCOMAS OF BONES OF THE EXTREMITIES

Volkova, M. A; Kuznetsova, I. P.; Kolyadyuk, I. V.;

Pel'man, S. G.; Frank, G. A.

The paper carries the results of treating 28 patients who were subjected to telegammatherapy and then chemotherapy by the method of regional perfusion. After the end of treatment the follow-up period comprised 2-3 years. In one half of the patients during the first year after treatment there was noted a recurrence of the neoplastic growth, in 4 of them with te simultaneous appearance of metastases in the lungs. Five patients are alive without signs of the disease, two of them with a preserved extremity. The above-mentioned technique may be recommended as palliative if the patient refuses an amputation of as the first stage of combined treatment.

D. H.

REEL/FRAME

19711424

02



USSR

UDC: 531.383

PEL'POR, D. S.

"Precision Gyro Vertical With Integral Correction"

Leningrad, Priborostroyeniye, No 6, 1972, pp 79-83

Abstract: This paper considers the theory of the gyro-stabilized platform using the gyro vertical with integral correction for determining the direction of the true vertical with high accuracy. In developing the theory, the characteristics of the gyro vertical correction channels are assumed ideal, and the equations of the moments acting around the frame axes of the gyroscope pendulum gimbals are given. From these are obtained the equations for the precessional motion of the gyro vertical. Under the conditions of a long flight of the aircraft or missile in which the platform is mounted, the attenuation or damping of the gyro vertical must be taken into account; the conditions under which correction for the damping must be included are investigated. It is computed that the error in the vertical indication is no more than one angular minute. The author is connected with the N. E. Bauman Higher Technical School of Moscow.

1/1

USSR

UDC 620.186.5:669.14

VORONINA, T. I., PEL'TS, E. I. and PRUSAKOV, B. A.

"Phase Recrystallization of Steel at Heating"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 6, 1970, pp 62-63

Abstract: An investigation was made of two steels (types 40 and 50) to confirm an earlier-proposed recrystallization scheme. The structure of overheated steels after repeated heating at 50 degrees/min changes substantially and depends greatly on the microstructure developing at overheating. After repeated heating, sections resembling the initial overheating grain in magnitude and shape are clearly visible. The assumed diameter of the real austenite grain formed during repeated heating at a magnification of 100 is 40-50 times smaller than the diameter of the sections observed at a magnification of 5. The real grains increase with increasing repeated heating temperature, but even after a 28-hr holding time, they remain substantially smaller than the initial overheating grains. A metallographic study of sections at large magnifications did not show any sign of boundaries in places corresponding to the grain boundaries at small magnification. This suggests that the sections observed are not grains, but rather, "pseudograins". This is confirmed by the results of a study of the microstructure formed, during the repeated heat treatment, in the preliminarily overheated and water-cooled type 40 steel. The

1/2

USSR

VORONINA, T. I., et al., Metallovedeniye i termicheskaya obrabotka metallov, No 6, 1970, pp 62-63

"pseudograins" are sections with a grain-oriented martensite, which selectively reflect light after etching, thus producing the appearance of coarse grains in the steel. If the martensite orientation is destroyed (at third tempering) the pseudograins also disappear. 7 references.

2/2

USSR

UDC: 621.319.4(088.8)

PEL'TSMAN, I. D., NEZHINSKIY, A. I.

"A Device for Applying Current-Conducting Bands to Cylindrical Stock for Radio Components"

USSR Author's Certificate No 253246, filed 8 Apr 68, published 26 Feb 70  
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V382 P)

Translation: This Author's Certificate introduces a device for applying current-conducting strips to the cylindrical blanks of radio components such as capacitors. The device contains a mechanism for loading and holding blanks, a transport mechanism, a unit for applying the strips which is made in the form of a wiper connected to a distributor shaft. The installation also incorporates a paste bath, a mechanism for rotating and removing the blanks, a drying unit and a drive mechanism. As a distinguishing feature of the patent, the operational reliability of the device and the quality of applying the strips are improved by making the above-mentioned mechanism for holding the blanks in the form of spring-loaded thrust blocks located on both sides of the transport disc. Fastened on the ends of these

1/2

PEL'TSMAN, I. D., NEZHINSKIY, A. I., USSR Author's Certificate No 253246

blocks are gears which engage with gears on the housing of the mechanism for rotation of the blanks. These gears are carried by a roller which reciprocates in the vertical plane, and on one end of this roller is a friction disc which interacts with a friction disc on the carriage shaft.

2/2

- 63 -

USSR

UDC: 621.396.6.017.72(088.8)

PEL'TSMAN, I. D., NEZHINSKIY, T. I., KHASPEKOVA, Ya. N., AZBIL', Z. A.

"A Drying Installation for Radio Components"

USSR Author's Certificate No 267488, filed 3 Oct 66, published 27 Jul 70  
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V232 P)

Translation: This Author's Certificate introduces a drying installation for radio components such as microelements which have a flat base. The installation contains a rotating disc for moving the components from a batching device to the unloading port, and an infrared heater. To improve drying quality and simplify the design, the heater is made in the form of a flat plate located over the disc, and the disc is equipped with radial chutes so that the components can be moved one step by rakes when the chutes match up with the loading device and the unloading port. On the lateral cylindrical surface of the disc between the grooves are drive pins coupled to a mechanism for turning a system of levers and springs to turn the disc by steps and fix its position.

1/1

USSR

UDC: 621.396.69:621.316.826

AFANAS'YEV, B. K., VOL'FSON, I. B., KARACHENTSEV, A. Ya., PEL'TSMAN, I. D.,  
POMUKHIN, N. P., CHERNYAVSKIY, Yu. M.

"Experience in Developing an Automated Production Line for SN1-1-1 Varistors"

Elektron. tekhnika. Nauchno-tekhn. sb. Tekhnol. i organiz. proiz-va (Electronic Technology. Scientific and Technical Collection. Technology and Organization of Production), 1970, vyp. 4 (36), pp 3-10 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V412)

Translation: The authors describe a line which excels the level of the best known models in its technological characteristics, level of automation and the number of operations performed. The principle of unification was extensively utilized in designing the line. The line is equipped with a system for accumulating and processing data on the course of the technological process. Resumé.

1/1

PELTSMAN, I. Zh.

*Biochemistry*

New Institute of Biochemistry and Physiology of Microorganisms, Pushchino

SECTION VI

Sci Selecta, Abstracts 11

PC-89 SEP 71

Descriptions:

(U) During this quarterly reporting period, five new articles were located from the Institute of Biochemistry and Physiology of Microorganisms at Pushchino. On the basis of these articles, it was possible to identify 13 new personalities with the Institute. The personalities, the subjects of the articles, and the dates are given below:

<u>Beyer, M. Ye.</u>	<u>α-oxoglutaric acid</u>	1969 (65)
<u>Borodin, A. N.</u>	<u>antibiotic production</u>	1970 (66)
<u>Dmitriyev, Ye. M.</u>	<u>candida lipolytica</u>	1971 (67)
<u>Kalashnikov, Z. A.</u>	<u>α-oxoglutaric acid</u>	1969 (65)
<u>Parkinson, R. Ye.</u>	<u>α-oxoglutaric acid</u>	1969 (65)
<u>Lyudskanov, G. R.</u>	<u>α-oxoglutaric acid</u>	1970 (67)
<u>Mikhailov, S. Z.</u>	<u>antibiotic production</u>	1970 (66)
<u>Peltzman, I. Zh.</u>	<u>α-oxoglutaric acid</u>	1970 (65)
<u>Rosenfeld, S. M., P. L.</u>	<u>candida lipolytica</u>	1971 (67)
<u>Shter, V. A.</u>	<u>α-oxoglutaric acid</u>	1971 (65)
<u>Tikhonov, S. M.</u>	<u>α-oxoglutaric acid</u>	1971 (65)
<u>Vakhtang, Sh. D.</u>	<u>α-oxoglutaric acid</u>	1971 (65)
<u>Zolotarev, D. B.</u>	<u>α-oxoglutaric acid</u>	1971 (65)

Two of the five new articles were authored by personalities already identified with the Institute of Biochemistry and Physiology of Microorganisms. One of these articles dealt with penicillin bromo compound (68) and the other with acetone oxidizing bacteria (69). Reference (6) was jointly issued from the above Institute and the Institute of Microbiology Lenin A. Kikhenshcheyn Riga, possibly indicating some joint work between the two facilities.

10  
UNCLASSIFIED



1/2 025

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--NATURE OF ACTIVE CENTERS DURING ANIONIC POLYMERIZATION OF  
FORMALDEHYDE CN TRIETHYLAMINE -U-

AUTHOR--(05)--MARKEVICH, M.A., PENCHEV, P.I., KEDRINA, N.F., IVANOV, Y.V.,  
YENIKOLOPYAN, N.S.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1140-2 (PHYS CHEM)

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYMERIZATION, FORMALDEHYDE, TRIETHYLAMINE, CHEMICAL REACTION  
MECHANISM, NMR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/0719

STEP NO--UR/0020/70/190/005/1140/1142

CIRC ACCESSION NO--AT0124389

UNCLASSIFIED

272 025

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124389

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING 2 MECHANISMS ARE CONSIDERED FOR THE ANIONIC POLYMERIZATION OF HCHO IN THE PRESENCE OF ET SUB3 N: (1) ET SUB3 N PLUS H SUB2 O IN EQUILIBRIUM TO ET SUB3 N PRIME POSITIVE H PLUS OH PRIME NEGATIVE; OH PRIME NEGATIVE PLUS HCHO YIELDS HOCH SUB2 O PRIME NEGATIVE. THE POLYMER CHAIN GROWTH INVOLVES (HOCH SUB2 O) SUBN CH SUB2 O PRIME NEGATIVE/HNET SUB3 PRIME POSITIVE (I) AS THE ACTIVE CENTER; H SUB2 O MUST BE PRESENT AS THE COCATALYST. (2) ET SUB2 N PLUS HCHO YIELDS ET SUB3 N PRIME POSITIVE CH SUB2 O PRIME NEGATIVE. THE POLYMER CHAIN GROWTH INVOLVES THE ZWITTERION ET SUB3 N PRIME POSITIVE (CH SUB2 O) SUBN CH SUB2 O PRIME NEGATIVE (II). HCHO WAS POLYMERIZED IN PHASE OR IN THE GAS PHASE IN THE PRESENCE OF ET SUB3 N. THE POLYMER MIXTURES WERE EXTENDED WITH PHNO SUB2 AT 100 DEGREES. THE EXTENSIONS DID NOT HAVE COMPOUNDS OF TYPE II AS SHOWN BY COMPARING NMR SPECTRA OF THE EXTENSIONS WITH THE SPECTRUM OF (ET SUB3 NCH SUB2 O) PRIME POSITIVE CL PRIME NEGATIVE. THUS, MECHANISM (1), POSSIBLY ALSO INVOLVING FAST PROTON EXCHANGE (E. K. RALPH, ET AL., 1967), IS PREFERRED. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--0906170  
TITLE--EFFECT OF WATER, METHANOL, FORMIC ACID, AND METHYLAL ON GAS PHASE  
POLYMERIZATION OF FORMALDEHYDE IN AN OPEN SYSTEM -U-  
AUTHOR--(03)-PENCHEV, P.I., IVANOV, V.V., YENIKOLOPYAN, N.S.  
COUNTRY OF INFO--USSR  
SOURCE--VYSOKUMOL. SOEDIN., SER. A 1970, 12(2), 329-35  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--WATER, METHANOL, FORMIC ACID, POLYMERIZATION,  
POLYFORMALDEHYDE, MOLECULAR WEIGHT, TRIETHYLAMINE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1992/0318 STEP NO--UR/0459/70/012/002/0329/0335  
CIRC ACCESSION NO--AP0111512

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0111512

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF THE TITLE ADDITIVES ON THE YIELD AND MOL. WT. OF POLYFORMALDEHYDE (I), OBTAINED BY GAS PHASE POLYMERIZATION OF HCHO IN AN OPEN SYSTEM IN THE PRESENCE OF ET SUB3N, WERE STUDIED. STEADY STATE TREATMENT OF EXPTL. DATA REVEALED THAT H SUB2 O AND MEQH ACTED AS COCATALYSTS WITH ET SUB3N, WHEREAS HCO SUB2 H INHIBITED THE POLYMERIZATION (BY REACTING WITH ET SUB3N), AND CH SUB2(OME)SUB2 HAD NO EFFECT. THE YIELD OF I WAS INDEPENDENT OF THE H SUB2 O CONTENT, BUT THE MOL. WT. DECREASED IN THE PRESENCE OF H SUB2 O. H SUB2 O, MEQH, AND HCO SUB2 H EFFECTED CHAIN TRANSFER IN THE REACTIVITY RATIO 1.0:1.7:6.5, RESP. MEQH ALSO MODIFIED THE AV. MOL. WT. OF I BY CHAIN TRANSFER WITH FORMATION OF STABLE TERMINAL MEQ GROUPS.

UNCLASSIFIED

Conferences

USSR

DEC 621.73:061.3

LERNER, P. S., PENCHUKOV, V. M., ROMANOV, Ye. S., and SHLUMPER, V. B.

"Scientific and Technical Conference on Some Problems of the Theory and Practice of Metalworking by Pressure"

Moscow, Kuznechno-shrampovochnoye Proizvodstvo, No 7, Jul 70, pp 48-49

Abstract: The Scientific and Technical Conference on Problems of the Theory and Practice of Metalworking by Pressure was sponsored by the Tula Polytechnical Institute jointly with the Tula Chapter of the Scientific and Technical Society of the Machinery Industry. The conference was attended by representatives of 16 institutions of higher learning of Moscow, Leningrad, Izhevsk, Rostov-on-Don, Tomsk, Chelyabinsk, and other cities, 10 scientific research institutes, and by representatives of plants in Leningrad, Moscow, Nikolayev, Ul'yanovsk, Riga, and elsewhere. The 54 reports presented at the conference highlighted individual problems of the theory of plastic working of metals, research on existing technology and the development and introduction of new technology in production. The conference was conducted in plenary sessions and sections on sheet metal stamping and closed impression die forging. Among the topics discussed were the following: effect of anisotropy on the process of plastic deformation (S. P. Yakovlev, V. F. Kuzin, V. M. Lyalin), development of rational geometric

1/3

USSR

LERNER, P. S., et al, Kuznechno-shtampovochnoye Proizvodstvo, No 7, Jul 70,  
pp 48-49

parameters of tools to ensure uniform deformation (S. A. Valiyev, V. M. Chudin), inhomogeneity of the buildup of deformation in nonstationary plastic flow (I. P. Renne, N. I. Deplov, E. A. Boyko), plastic flow in axisymmetric deformation (S. P. Yakovlev, V. M. Lyalin), rational technology of reverse and rotational extrusion (M. N. Tsykina, L. G. Yudin, Yu. M. Filigarov), drawing and reducing the wall thickness (I. P. Renne, V. F. Zimin, P. S. Lerner); test data on drawing box-type parts of great width (V. P. Romanovskiy); problems of failure and reserve of plasticity of materials (V. L. Kolmogorov, V. I. Ural'skiy, I. A. Sokolov, V. S. Plakhotin); study of deformation inhomogeneity (G. D. Del', V. A. Ogorodnikov, F. Kh. Tomilov); the stress-strain state in deep drawing of cylindrical bodies (I. A. Sokolov, S. O. Kukutsa, V. I. Ural'skiy); selecting diagrams of forming cylindrical hollow billets by rotary rolls of a given profile (N. V. Potekushin, L. I. Artmeladze, Ye. M. Ravinskaya, A. N. Terent'yev); theoretical and experimental study of combined reverse deep drawing of aluminum parts with reducing wall thickness (A. A. Bebris, D. N. Gol'dberg); changes in power parameters of drawing under liquid friction conditions (A. S. Chaurov, V. I. Kazachenok, A. A. Churakova); experimental extrusion of billets and its

2/3

USSR

LERNER, P. S., et al, Kuznechno-shtampevochnoye Proizvodstvo, No 7, Jul 70,  
pp 48-49

combination with upsetting, sizing, etc. (V. I. Zaydman); and the effect of  
superplasticity and its potential use in the technology of metalworking by  
pressure (Ya. M. Okhrimenko, O. M. Smirnov).

3/3

USSR

UDC 595.771

GUTSEVICH, A. V., and PENDIKOVA, YE. G., Zoological Institute, Academy of Sciences USSR, Leningrad, and Omsk City Epidemiological Station

"The Bloodsucking Mosquito *Aedes (Ochlerotatus) albescens* Edw. (Diptera, Culicidae) as a Distinct Species"

Leningrad, Entomologicheskoye Obozreniye, Vol 51, No 2, 1971, pp 401-402

Abstract: Studies were carried out on *A. albescens* Edw. to determine whether or not it is a species distinct from *A. lepidonotus* Edw. rather than a synonym, and to ascertain its position with respect to *A. subdiversus* Mart. Collections at the Zoological Institute and Omsk City Epidemiological station included no *A. lepidonotus*, which is a Mediterranean mosquito easily identified by presence of scales on the postscutellum, lacking in the other 2 species. Female *A. albescens* and *A. subdiversus* were found to be morphologically different, but differences in males and larvae remain undetermined. Though these 2 species are sympatric. *A. subdiversus* is found further west (to the Volga), east (to the Transvaika), and south (to southern Kazakh SSR regions).

1/1



1/2 028

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--RESONANCE SPECTROSCOPIC STUDY OF OXIDIZED STATES IN FERROCENE  
COPOLYMERS -U-

AUTHOR--(06)-ALIYEV, L.A., VISHNYAKOVA, T.P., PAUSHKIN, YA.M., PENDIN,  
A.A., SOKOLINSKAYA, T.A., STUKAN, R.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 306-10

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GAMMA SPECTRUM, FERROCENE, COPOLYMER, PHTHALIC ANHYDRIDE, ZINC  
CHLORIDE, OXIDATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1999/1979

STEP NO--UR/0062/70/000/002/0306/0310

CIRC ACCESSION NO--AP0123760

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123760

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GAMMA RESONANCE SPECTRA OF COPOLYMERS MADE OF FERROCENE AND ETCOME AND PHTHALIC ANHYDRIDE WERE REPORTED IN CONJUNCTION WITH DETN. OF THE AMT. OF THE OXIDIZED FORM OF FE IN SUCH POLYMERS FROM THE AMT. OF OXIDIZING AGENT CONSUMED. THE COPOLYMER WITH MECNET WAS OXIDIZED TO SMALLER THAN OR EQUAL TO 60PERCENT OF ITS FE CONTENT, WHILE THE COPOLYMER WITH PHTHALIC ANHYDRIDE WAS OXIDIZABLE TO 45PERCENT. THE COPOLYMER WITH PHTHALIC ANHYDRIDE HAVING THE MAX. LEVEL OF OXIDN., RELATIVE TO FERROCENE AND WITH MIN. PROGRESS OF SECONDARY REACTIONS CONTAINED SOME 35PERCENT OXIDIZED FE ACCORDING TO SPECTRAL DATA AND 50PERCENT ACCORDING TO CHEM. DETN. THIS COPOLYMER WAS PREPD. WITH A ZNCL SUB2 CATALYST IN 5 HR AT 150DEGREES IN AN AUTOCLAVE; THE SUBSTANCE WAS GENERALLY INSOL. THE OXIDNS. WERE DONE WITH K SUB2 CR SUB2 O SUB7 IN ACOH OR WITH A FECL SUB3 SOLN. IN AQ. KCL.

FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/4 020 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--MORE GENERAL TRAINING FOR ENGINEERS URGED -U-  
AUTHOR--PENDYUR, B. P  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, KRASNAYA ZVEZDA, RUSSIAN, 8 JANUARY 1970, P 2  
DATE PUBLISHED--08JAN70  
SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES  
TOPIC TAGS--OFFICER PERSONNEL, MILITARY SCHOOL, MILITARY INSTITUTE,  
MILITARY ENGINEERING TRAINING  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1987/1815 STEP NO--UR/9008/70/000/000/0002/0002  
CIRC ACCESSION NO--AN0104952  
UNCLASSIFIED

2/4 020

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--ANO104952

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. "TODAY I FEEL UNCOMFORTABLE WHEN I ADMIT THAT, WHEN I WAS IN MILITARY SCHOOL, I THOUGHT THAT AS AN ENGINEER I SHOULD STUDY ONLY TECHNICAL SUBJECTS. TRUE, THE THOUGHT DID OCCUR TO ME: JUST WHO WILL BE WORKING WITH PEOPLE? BUT I CONTENTED MYSELF WITH THE THOUGHT THAT THERE ARE COMMANDERS, POLITICAL WORKERS, PARTY AND KOMSOMOL ORGANIZATIONS. BUT IN THE FIRST DAYS AFTER I REPORTED TO MY UNIT I UNDERSTOOD: IF ONE WISHES TO SKILLFULLY DIRECT A COLLECTIVE AND SUCCESSFULLY TRAIN HIS SUBORDINATES, THERE IS NO WAY OUT OF THESE RESPONSIBILITIES. SOONER OR LATER, LIFE ITSELF WILL FORCE YOU TO PASS AN EXAMINATION IN POLITICAL AND COMMAND MATURITY". THIS QUOTATION FROM ENGINEER MAJOR YEVGENIY TIMCHENKO, A GRADUATE OF THE KIEV HIGHER ARTILLERY ENGINEERING ORDER OF LENIN, RED BANNER ACADEMY IMENI S. M. KIROV, IS FOUND IN A COLLECTION OF ARTICLES KOMANDIR, VOYENNIY INZHENER, VOOSPITATEL' PODCHINENNYKH (COMMANDER, MILITARY ENGINEER, TRAINER OF HIS SUBORDINATES) WHICH WAS PREPARED THIS YEAR BY INSTRUCTORS OF THE CHAIR OF MARXISM LENINISM. THE COLLECTION, WHICH INCLUDES THE EXPERIENCES OF GRADUATES OF VARIOUS YEARS CONVINCINGLY DEMONSTRATE HOW IMPORTANT IT IS FOR THE FUTURE MILITARY ENGINEER TO ACQUIRE THE QUALITIES OF AN OFFICER TRAINER WHILE HE IS STILL IN THE ACADEMY. IT IS NOT COINCIDENTAL THAT THIS VERY CONCEPT WAS ONE OF THE CENTRAL ONES AT THE PARTY CONFERENCE OF THE ACADEMY.

UNCLASSIFIED

3/4 020

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AN0104952

ABSTRACT/EXTRACT--THE SPEAKER, CHIEF OF POLITICAL SECTION COLONEL S. BERONIK, AND THE OTHERS WHO MADE PRESENTATIONS DISCUSSED MANY QUESTIONS, AMONG THEM THE INCREASE IN SCIENTIFIC PERSONNEL, STRENGTHENING OF THE ROLE OF PARTY CONFERENCES, INDOCTRINATING YOUNG PARTY MEMBERS IN PUBLIC ACTIVIST WORK, IMPROVEMENT OF THE TEACHING PROCESS AND THE DEVELOPMENT OF CRITICISM AND SELF CRITICISM. BUT NO MATTER WHICH QUESTION WAS RAISED, THEY ALL STRESSED THAT GRADUATES MUST POSSESS HIGH IDEALISM, A CERTAIN AMOUNT OF PEDAGOGICAL SKILL AND PREPAREDNESS TO WORK WITH PEOPLE, IN ADDITION TO THEIR PROFOUND SPECIALIZED KNOWLEDGE. THE DELEGATES TO THE PARTY CONFERENCE DEVOTED MUCH ATTENTION TO THE QUESTION OF MORAL PSYCHOLOGICAL TRAINING OF THE STUDENTS. AND THE REMARK BY COLONEL I. OVCHARENKO THAT THIS IS NOT SOME SORT OF SPECIAL TRAINING IS TRUE. IT IS ACCOMPLISHED IN THE PROCESS OF THE ENTIRE SYSTEM OF EDUCATION AND TRAINING, BY THE ENTIRE STRUCTURE OF MILITARY LIFE. IF THIS IS SO, THEN NO SMALL ROLE MUST BE PLAYED BY PARTICIPATION IN TACTICAL LESSONS AND FIELD EXERCISES. UNFORTUNATELY, ENGINEERING STUDENTS RARELY GO TO THE FIELD, AND SOME STUDENTS DO NOT EVEN GO TO RANGES. THIS IS A BIG GAP IN MORAL PSYCHOLOGICAL TRAINING AND, IN THE FINAL ANALYSIS, IN COMMANDER'S TRAINING IF WE CONSIDER THE ALL ROUND TRAINING OF THE GRADUATES. PARTY MEMBERS WERE DISTURBED THAT PARTY ORGANIZATIONS DEVOTED LITTLE ATTENTION TO THIS PROBLEM AND DID NOT ALWAYS FIND SUCCESSFUL MEANS OF INFLUENCING THAT FACET OF STUDENT TRAINING. APPARENTLY THIS IS A VITAL PROBLEM AT THE ACADEMY, SINCE MANY OF THE PARTICIPANTS REFERRED TO IT.

UNCLASSIFIED

4/4 020

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AN0104952

ABSTRACT/EXTRACT--THE DIRECTOR OF THE ACADEMY MAJOR GENERAL OF ARTILLERY YE. KRASKEVICH SPOKE ABOUT FIELD TRAINING OF STUDENTS AND ABOUT CLOSER CONTACT WITH TROOP UNITS. HE REMARKED THAT A WIDE FIELD OF ACTIVITY IN THIS FIELD WAS OPEN TO PARTY ORGANIZATIONS AND THE POLITICAL SECTION OF THE ACADEMY. IT IS UNQUESTIONABLE THAT THE COLLECTIVE OF ONE OF THE VERY OLDEST MILITARY EDUCATIONAL INSTITUTIONS OF OUR COUNTRY TAKES A CRITICAL VIEW OF THE DEFICIENCIES NOTED BY THE CONFERENCE AND WILL SOLVE THE PROBLEMS IN A CREATIVE, PARTY MANNER.

UNCLASSIFIED

1/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--THE AGING TRAITS OF CEREBRAL STROKES -U-

AUTHOR--(03)--DRACHEVA, Z.N., PENEK, N.V., SHEHURINDK, L.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,  
VOL 70, NR 6, PP 812-815

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CEREDRUM, HEMORRHAGE, BIOLOGIC AGING, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3001/0921

STEP NO--UR/0246/70/070/006/0812/0815

CIRC ACCESSION NO--APO126580

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126580

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER CONCERNS A COMPARATIVE STUDY OF CLINICAL TRAITS IN HEMORRHAGIC STROKES OF THE YOUNG AND OLD AGE. THE AUTHORS STUDIED 17 PATIENTS IN THE AGE GROUP OF 30-45 AND 25 PATIENTS FROM 60-75 YEARS OF AGE WITH CEREBRAL HEMORRHAGES. IN ALL THE CASES THE DIAGNOSIS WAS VERIFIED IN POST MORTEM EXAMINATIONS. THE PATIENTS OF THE YOUNGER GROUP WERE CHARACTERIZED BY MORE EXPRESSED GENERAL BRAIN SYMPTOMS, A RAPID DEVELOPMENT OF COMATOSE STATES, AUTOMATIZED JESTURES, HORMETONIA, OCULOMOTOR DISORDERS, DISTURBANCES OF RESPIRATION AND CARDIAC ACTIVITY. THE OLDER PATIENTS DID NOT EXPRESS SO STRIKINGLY THE GENERAL BRAIN SYMPTOMS, WHICH DEVELOPED MORE GRADUALLY. THIS MAY BE RELATED TO A MORE COMPENSATED BRAIN EDEMA, SWELLING, BECAUSE OF THE CEREBRAL AND BRAIN TISSUE ATROPHY, AS WELL AS A DECREASE OF THE REACTIVITY ON BEHALF OF THE NERVOUS SYSTEM. FACILITY: KAFEDRA NERVNYKH BOLEZNEY.

UNCLASSIFIED



USSR

UDC 62-50

PENEV, G. D., and YAKUBOVICH, V. A.

"Some Adaptive Control Problems"

Moscow, Doklady Akademii Nauk SSSR, Vol 198, No 4, 1971, pp 787-790

Abstract: The authors investigated the digital control system

$$x_{t+1} = A(\xi)x_t + b(\xi)u_t + f(t, x_t, \xi), \quad \zeta_t = c(\xi)^* x_t:$$

where  $t$  assumes values of  $0, 1, \dots$ ;  $\xi$  is the unknown vector of the variable parameters which assumes values in the given set  $M$ ;  $A(\xi)$  is a quadratic matrix of order  $n$ ;  $u_t$  is a real variable called the "control";  $f(t, x, \xi)$  is a real vector function ("small disturbance") with a value in  $R^n$ ;  $b(\xi)$ ,  $c(\xi) \in R^n$ ,  $x_t \in R^n$ ;  $\zeta_t$  is a real variable. The problem is considered in the example of a bicycle-riding robot which must learn to ride a bicycle moving at constant speed. "Brain equations" are derived, and four theorems are proved. Experiments were performed in computerized simulation of the self-training process of the bicycle-riding robot the brain equations of which were taken from one of the theorems presented in this article. The parameters of an ordinary bicycle were used. The bicyclist fell six times

1/2

- 4 -

USSR

PENEV, G. D., and YAKUBOVICH, V. A., Doklady Akademii Nauk SSSR, Vol 198, No 4, 1971, pp 787-790

and, beginning with the seventh game, learned to ride. In other experiments a control delay of  $\Delta t = 0.01-0.1$  second was introduced, and the bicycle rider learned to ride in 10-20 games.

2/2

USER

UDC 621.357.7:669.268

PESHCHANSKIY, G. I., PENEV, V. G., KRASNYYANSKIY, YE. YA., GEDZEL'MAN, YA. A.  
KRAMSKOY, L. A., AVERBUKH, M. A., AZERLYAN, D. L., MOLDAVANOV, V. P.,  
CHAUSOVSKIY, M. R., BEYZERMAN, YA. M., SHTEYNBERG, E. G., PIKMAN, A. R.,  
SHTEYN, A. A., KAMINNIK, S. I., DENISYUK, B. M.

"Anode for Chromeplating Piston Rings"

USSR Author's Certificate No 231994, filed 8 Apr 66, published 12 May 69  
(from RZh-Khimiya, No 23 (II), 10 Dec 69, Abstract No 23 L307 P)

Translation: An anode design is proposed for chromeplating of piston rings which differs in that, to increase the quality of coatings, the casing of the anode, equipped with tangentially arranged openings for electrolyte feed and exit, is made in the form of a truncated housing in the upper centering part of the housing.

1/1

172 033 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--PARAMETRIC LUMINESCENCE AND LIGHT SCATTERING ON POLARITONS -U-  
AUTHOR--(03)-KLYSHKO, D.N., PENIN, A.N., POLKOVNIKOV, B.F.  
COUNTRY OF INFO--USSR  
SOURCE--PIS'MA. ZH. EKSP. TEOR. FIZ. 1970, 11(1) 11-14  
DATE PUBLISHED--70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--LIGHT SCATTERING, CRYSTAL LUMINESCENCE, NIOBATE, LITHIUM  
COMPOUND, CRYSTAL POLARIZATION, ARGON LASER, SPECTROSCOPY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1983/1790 STEP NO--UR/0386/70/011/001/0011/0014  
CIRC ACCESSION NO--AP0054627  
UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0054627

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN OBSERVATION OF THE SCATTERING IN A WIDE FREQUENCY INTERVAL ENABLES MEASURING THE DISPERSION OF NONLINEAR AND LINEAR POLARIZABILITIES OF THE SUBSTANCE AND PROVES TO BE A SUITABLE METHOD OF NONLINEAR SPECTROSCOPY. BY USING A LI NIOBATE CRYSTAL, THE SCATTERING WAS OBSD. IN A TRANSITION REGION WHERE IT WAS CAUSED BOTH BY THE ELECTRON AND LATTICE NONLINEARITIES. THE FREQUENCY DEPENDENCE OF SCATTERED LIGHT ON THE OBSERVATION DIRECTION IS A CHARACTERISTIC SIGN OF THE COHERENT INELASTIC SCATTERING. A FREQUENCY ANGLE SPECTRUM WAS OBTAINED ON PLACING THE SPECTROGRAPH SLIT (PARALLEL TO THE CRYSTAL AXIS) INTO THE LENS FOCUS; THE EXCITING BEAM OF AN AR LASER WAS PERPENDICULAR TO THE CRYSTAL AXIS AND HAD EXTRAORDINARY POLARIZATION WHILE THE SCATTERED LIGHT AND POLARITIONS HAD ORDINARY ONES. THE MOST IMPORTNAT FEATURE OF THE SPECTRUM DIAGRAM WAS A BRIGHTNESS GAP OF THE SCATTERED RADIATION AT AN IDLE FREQUENCY (THE DIFFERENCE BETWEEN THE FREQUENCIES OF INCIDENT AND OBSD. LIGHTS) OF SIMILAR TO 1500 CM PRIME NEGATIVI; IT WAS CAUSED BY MUTUAL COMPENSATION OF THE ELECTRON AND LATTICE NONLINEARITIES ON THIS FREQUENCY. THE EXPTS. INDICATED THAT THE ADSORPTION ON THE IDLE FREQUENCY DID NOT AFFECT IMMEDIATELY THE POWER OF SCATTERED LIGHT DP-D OMEGA. THE EFFECT OF RAMAN SCATTERING ON SMALL ANGLES MAKES IT EASY TO DET. THE LONGITUDINAL OR TRANSVERSE TYPES OF POLARIZATION OF THE LATTICE VIBRATIONS.

UNCLASSIFIED

USSR

UDC: 621.315.592

GLADKOV, P. S., ZHURKIN, B. G., and PENIN, N. A.

"High-Frequency Photoconductivity and Recombination Radiation of Pure Germanium Under Intense Optical Excitation and Low Temperatures"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1919-1923

Abstract: The high-frequency photoconductivity of pure germanium at a frequency of  $10^{10}$  Hz and a line at 709 meV observed in the recombination radiation spectrum is experimentally investigated. A block diagram of the equipment is shown. The excitation source was a pulsed semiconductor laser, of GaAs operating at a wavelength of 0.84 microns, with an output power of 10-12 W in a pulse of 2  $\mu$ s duration and a pulse repetition rate of 400 Hz. The specimen was illuminated by a light conductor of melted quartz, 4.2 mm in diameter, inside a standard 3-cm waveguide. A broad-band system with a strobic integrator was used to record the high-frequency conductivity of n-type germanium specimens with a specific resistance of 49 ohm-cm, attached directly to the lower end of the light conductor. Curves of the experimental results are 1/2.

USSR

UDC: 621.315.592

GLADKOV, P. S., et al, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1919-1923

given together with a reproduction of an oscillogram of the photo-conductive pulse. It was found that the assumption that a sharp increase in conductivity can be produced by heating the specimen with a  $10^{16}/\text{cm}^3$  concentration of unbalanced carriers is unjustified. The authors thank V. P. Aver'yanova for preparing the Ge specimens and P. G. Yelisseyev and V. P. Strakhov for supplying the GaAs laser.

2/2

- 102 -

USSR

UDO 621.396.62.028.7:621.391.82

PENIN, N.A., KHAYKIN, N.SH., YURIST, B.V.

"On The Investigation Of The Noise-Factor Of An Optical Heterodyne Receiver With Impurity Photoresistance"

Radiotekhnika i elektronika, Vol XVII, No 5, May 72, pp 1018-1023

Abstract: An expression is found for the noise factor  $F$  of an optical heterodyne receiver with impurity photoresistance and with arbitrary powers of the heterodyne, and for various relations between the resistance of the photo-sensitive semiconductor crystal and the load. The problem of a choice of the parameters of the impurity photoresistance is considered with the object of decreasing the magnitude of the noise factor  $F$ . 3 fig. 7 ref. Received by editors, 12 April 1971.

1/1



USSR

UDC 621.315.592

GLADKOV, P. S., GINODMAN, V. B., ZHURKIN, B. G., PENIN, N. A.

"Photodielectric Effect in Compensated p-Type Silicon"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 5, No 11, 1971, pp 2219-2221

**Abstract:** A study was made of the photodielectric effect caused by localized charge carriers in p-type silicon alloyed with zinc and phosphorus. Study of this material permitted observation of the photodielectric effect caused by the polarizability of the neutral phosphorus atoms arising from two causes: 1) the initial material had p-type conductivity and all the phosphorus atoms were ionized, that is, polarization of the small donor atoms (phosphorus) was absent; 2) inasmuch as the zinc in the silicon is a deep acceptor admixture, the polarizability of the zinc atoms could be neglected since the polarizability  $\alpha \sim (E_i)^{-3}$ , where  $E_i$  is the ionization energy of the admixed atoms. The experimental setup is described, and the results are discussed. The experimentally obtained value of the polarizability of the donor admixture of phosphorus in the silicon agrees well with the theoretical value of  $\alpha_{theory}$  calculated by the formula presented in the paper by D'Altroy, et al. [Phys. Rev., No 103, 1671, 1956]. Under the assumption that the basic contribution to the

1/2

USSR

GLADKOV, P. S., et al., Fizika i Tekhnika Poluprovodnikov, Vol 5, No 11, 1971, pp 2219-2221

polarizability of the light donor admixture is made by an electron with an effective mass  $m_{\perp}^* = 0.19 m_0$ , and the contribution of the electron with the mass  $m_{\parallel}^* = 0.97 m_0$  can be neglected. The calculations show that the electron with heavy mass gives a polarizability of  $1.7 \cdot 10^{-20} \text{ cm}^3$  which is two orders less than the contribution to the polarizability by the light electron equal to  $2.3 \cdot 10^{-18} \text{ cm}^3$ . A graph is presented for the time dependence of the frequency shift of the oscillator used in the experiment after cessation of illumination. The decay curve is nonexponential, which is characteristic of the process of inter-admixture recombination.

2/2

1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--DEPENDENCE OF HYPERFINE SPLITTING ON UNIAXIAL COMPRESSION IN THE  
EPR SPECTRUM OF PHOSPHORUS IN STRONGLY DOPED N SILICON -U-  
AUTHOR--(04)-GINODMAN, V.B., GLADKOV, P.S., ZHURKIN, B.G., PENIN, N.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 325-8.

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SILICON SEMICONDUCTOR, ELECTRON PARAMAGNETIC RESONANCE,  
PHOSPHORUS, LINE SPLITTING, HYPERFINE STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1868

STEP NO--UR/0449/70/004/002/0325/0328

CIRC ACCESSION NO--AP0118832

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0118832

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE EFFECT WAS STUDIED IN 3 N SI SAMPLES WITH DIFFERENT DONOR CCNCNS. (N SUBD EQUALS 3 TIMES 10 PRIME16, 2 TIMES 10 PRIME17, AND 5 TIMES 10 PRIME17-CM PRIME3) AT 4.2DEGREESK. COMPRESSION P EQUALS 26 KG-MM PRIME2 WAS APPLIED PERPENDICULAR TO THE (100) AXIS. THE PRESSURE DEPENDENCE OF THE MAGNITUDE OF HYPERFINE SPLITTING A IN SAMPLES WITH N SUBD EQUALS 3 TIMES 10 PRIME16-CM PRIME3 COINCIDES WITH THE THEORETICAL, WHILE THE SAME DEPENDENCES IN THE MORE STRONGLY DOPED SAMPLES LIE WELL ABOVE THE THEORETICAL. THE A PRESSURE DEPENDENCE IS CONSIDERED AND APPROPRIATE EXPRESSIONS ARE DERIVED SHOWING THAT THE SHIFT TO HIGHER A VALUES IS CONSISTENT WITH THE ANTIFERROMAGNETIC CHARACTER OF THE EXCHANGE INTERACTION OF THE P DOPANT. THE ENERGY OF EXCHANGE INTERACTION J IS DETD. EXPTL. AND THE DEPENDENCE OF J ON THE MEAN DISTANCE R BETWEEN DONOR ATOMS IS PLOTTED WITH PRESENT AND EARLIER DATA. THE EXPTL. POINTS LIE FAIRLY CLOSE TO THE THEORETICAL LINE CALCD. WITH J SUBD EQUALS 6.28 TIMES 10 PRIME14 HZ, A BOHR RADIUS ALPHA EQUALS 20.8 ANGSTROM; AND R EQUALS 0.69N SUBD PRIMENEGATIVEONE THIRD. FACILITY: FIZ. INST. IM. LEBEDEVA, MOSCOW, USSR.

UNCLASSIFIED